



SERVICE MANUAL

Supporting



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AuditLok® XLV Version 2.0

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Doc 800347
Rev 103101

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1 INTRODUCTION

SCOPE

This manual is designed to provide the instructions needed by store managers and other day to day operators of the safe(s) with the AuditLok XLV electronic lock and cash control system. Common safe hardware features are detailed and major features are explained in the following sections.

Operator instructions cover door access, vending, drops, and other basic user features. Manager instructions cover somewhat more advanced daily procedures such as enrolling and editing users, loading, unloading, and generating various reports.

General information about system configuration programming is also included. Those who would have the permissions required for performing the more advanced programming should be able to follow the block diagrams and on-screen instructions to accomplish programming goals which are not otherwise covered in this manual.

Basic troubleshooting information is included to help users with common error messages. Instructions for obtaining factory authorized service are also included.

MODELS

Products supported by this manual include the Intellisafe, Autobank controllers D8C, V1C, V2C, and Autobank remote units D8R, V1R, and V2R. The EPR is a stand alone control panel that interfaces with the system as if it were a remote safe unit.

CONTROLLER UNITS AND REMOTE UNITS

All AuditLok XLV systems have one controller unit. Any additional units must be remote units. Remote units are connected via Intellibus (data bus) to the controlling unit.

INTELLISAFE

Some applications require a safe with advanced auditing capability, but do not require bill validation or dispensing capability. For those applications, the Intellisafe serves as a conventional cash management safe with manual drop capability and one or more inner compartments for manual drop storage.

Intellisafe models may be stand alone safes or may be integrated as the controller for AuditLok XLV remote Autobank units.

AUTOBANK DISPENSING SAFES

The D8C and D8R hold eight columns of ten tubes each. The operator loads tubes filled with rolls of cash or coins, then dispenses the tubes as needed during the business day to make change for his till.

D8C units are equipped with a manual drop drawer and a locked interior compartment to securely hold manual drops.

The D8R works as a remote unit, communicating with any controlling unit via the data bus.

AUTOBANK VALIDATING SAFES

Bill validation is the most secure and accurate method of collecting and storing incoming cash throughout the day. The operator enables the bill acceptor from the control panel and inserts bills. The bill validator counts the number and type of bills, the CPU stores the data while the validator's cassette stores the cash.

V1C and V1R units are equipped with single validators while V2C and V2R units are equipped with two validators.

OBTAINING WARRANTY SERVICE

During the warranty period you obtain warranty service (inside the United States) by contacting the NKL Technical Service:

NKL Safe
Division of Fire King International, Inc.
101 Security Parkway
New Albany, IN 47150
Ph 800-452-4655
technicalsupport@fireking.com

Normal business hours are 8 am to 5 pm E.S.T., however the NKL Technical Service is available 24 hours a day, 7 days a week. Between midnight and 8 am (E.S.T.) and after 4 pm on Sundays or holidays you may leave a message and a technician will be paged to return your call, typically within the hour.

Outside the United States, NKL provides warranty parts at no charge (not including tariffs).

NKL reserves the right to deny warranty service in cases of abuse or misuse.

2 FACILITIES

INTELLISAFE FRONT VIEW

Refer to Figure 2-1 for descriptions to follow.

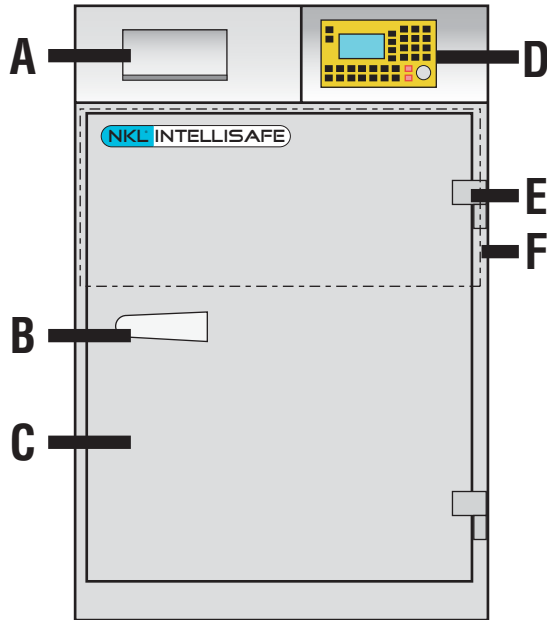


Figure 2-1: NKL Intellisafe

A—MANUAL DROP DRAWER

When making a manual drop, cash is inserted into an envelope, with the drop receipt, and put into the safe via this opening. The drawer includes an anti-fish feature to prevent extracting cash back through the opening after it is dropped inside.

B—HANDLE

The “L” style handle on this safe turns 90° right (clockwise) to open. When the handle is turned, its bolts retract and lock open. When the door shuts, a spring loaded detent mechanism fires the bolts to lock the door and the handle automatically returns to the locked position.

C—OUTER DOOR

The outer door is made of ½ inch A-36 steel. The door is laser cut for a perfect fit. It is equipped with a high quality 5-point boltwork for the best of security and efficient operation.

D—AUDITLOK XLV PANEL

This is the keypad and display module found on controller units only. A blank panel with a door control trigger replaces the keypad on remote units.

E—HINGE

Safes have two welded hinges on which the door swings open, up to 180°. Do not attempt to clean hinges. Com-

mercial cleaning chemical will cause the hinge lubricant to break down, making it difficult to open or close the door.

F—INNER COMPARTMENT

This is the approximate location of the inner compartment. This space is used to hold manual drops. It is protected by its own inner door lock.

AUTOBANK D8 SERIES FRONT VIEW

Refer to Figure 2-2 for descriptions to follow.

G—MANUAL DROP DRAWER

When making a manual drop, cash is inserted into an envelope, with the drop receipt, and put into the safe via this opening. The drawer includes an anti-fish feature to prevent extracting cash back through the opening after it is dropped inside.

H—TUBELOCK KEYSWITCH

This Medeco® keyswitch is used to open and close the tube lock blocking bar. The purpose of this bar is to prevent accidental or unauthorized insertion of tubes or debris into the dispensing system.

I—HANDLE

The “T” style handle on this safe turns 90° right (clockwise) to open. When the handle is turned, its bolts retract and lock open. When the door shuts, a spring loaded detent mechanism fires the bolts to lock the door and the handle automatically returns to the locked position.

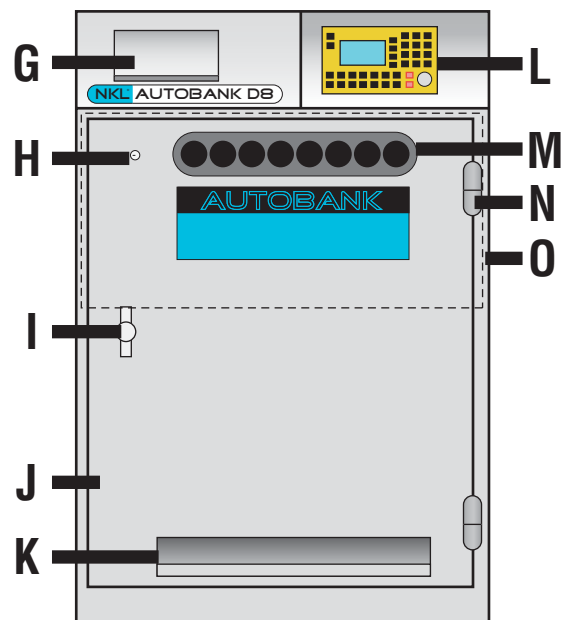


Figure 2-2: D8 Series Autobank

J—OUTER DOOR

The outer door is made of 3/8 inch A-36 steel. The door is laser cut for a perfect fit. It is equipped with a high quality, low profile boltwork for the best security and most efficient operation.

K—DISPENSORY CAPTURE TRAY

When tubes are vended, they drop into this tray area where they may be retrieved.

L—AUDITLOK XLV PANEL

This is the keypad and display module found on controller units, only. On remote units, a blank panel will replace the display. Remote units also will have a remote "lock fire" push-button or keyswitch.

M—Column Fill Openings

Tubes are loaded into the dispensing system through these opening. Columns are numbered 1 through 8, left to right as you look at the front of the safe. A tube lock blocking bar is provided to prevent accidental or unauthorized insertion of tubes or debris.

N—Hinge

Safes have two welded hinges on which the door swings open, up to 180°. Do not attempt to clean hinges. Commercial cleaning chemicals will cause the hinge lubricant to break down, making it difficult to open or close the door.

O—INNER COMPARTMENT

This is the approximate location of the inner compartment on D8 units. This space is used to hold manual drops. It is protected by its own inner door lock. The inner compartment is standard on D8C units and is optional on D8R remote units. D8X units may also have an inner compartment, though on D8X unit the inner door is usually operated by mechanical key lock.

AUTOBANK V1 SERIES FRONT VIEW

Refer to Figure 2-3 for descriptions to follow.

The AuditLok XLV panel is a separate unit with the V1C single validator Autobank safe.

P—REMOTE KEYSWITCH

All remote units (optional on controller units) have a keyswitch or pushbutton to actuate the lock mechanism.

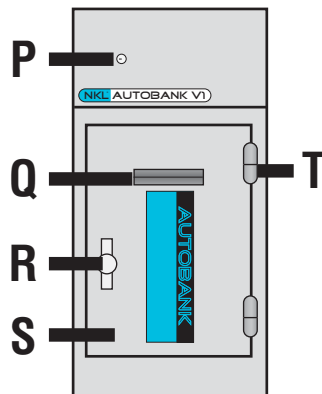


Figure 2-3: V1 Series Autobank

Q—VALIDATOR BILL INSERTION BEZEL

This unit's main feature is its bill validator. This opening is where bills are inserted into the validator. Internally, the validator is mounted on a bracket which folds down to allow access to remove the bill cassette.

R—HANDLE

A "T" style handle is used on this safe because of its low profile. It turns 90° right (clockwise) to open. When the handle is turned, its bolts retract and lock open. When the door shuts, a spring loaded detent mechanism fires the bolts to lock the door and the handle automatically returns to the locked position.

S—OUTER DOOR

The outer door is made of 3/8 inch A-36 steel. The door is laser cut for a perfect fit. It is equipped with a high quality, low profile boltwork for the best security and most efficient operation.

T—HINGE

Safes have two welded hinges on which the door swings open, up to 180°. Do not attempt to clean hinges. Commercial cleaning chemicals will cause the hinge lubricant to break down, making it difficult to open or close the door.

AUTOBANK V2 SERIES FRONT VIEW

Refer to Figure 2-4 for descriptions to follow.

U—REMOTE KEYSWITCH

All remote units (optional on controller units) have a keyswitch or pushbutton to activate the lock mechanism.

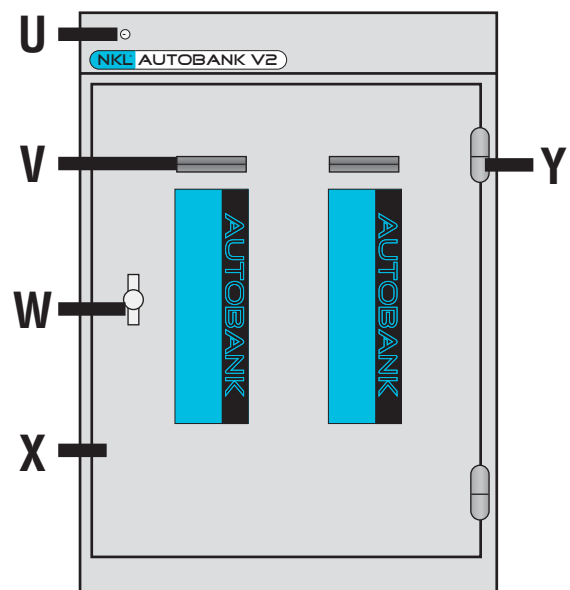


Figure 2-4: V2 Series Autobank

V—VALIDATOR BILL INSERTION BEZEL

This unit's main feature is its pair of bill validators. These openings are where bills are inserted into the validators. Internally, the validators are mounted on brackets behind an inner door. These brackets fold down to allow access to remove the bill cassettes.

W—HANDLE

The "T" style handle on this safe turns 90° right (clockwise) to open. When the handle is turned, its bolts retract and lock open. When the door shuts, a spring loaded detent mechanism fires the bolts to lock the door and the handle automatically returns to the locked position.

X—OUTER DOOR

The outer door is made of 3/8 inch A-36 steel. The door is laser cut for a perfect fit. It is equipped with a high quality, low profile boltwork for the best security and most efficient operation.

Y—HINGE

Safes have two welded hinges on which the door swings open, up to 180°. Do not attempt to clean hinges. Commercial cleaning chemicals will cause the hinge lubricant to break down, making it difficult to open or close the door.

REAR PANEL

All standard wiring connections are made via the rear panel. Refer to Figure 2-5 for the descriptions to follow.

ALARM CABLE

A cable feeds through the rear panel for connection to an external alarm system. If the safe is not connected to an alarm system, the cable should remain coiled neatly out of the way of other connections. This cable is only present on controller (C) units.

SAFE POWER

The AuditLok XLV is designed to operate with an external switch-mode power supply that produces the various voltages required by the display and other internal electronics.

AUX POWER

Validators on V1 and V2 units require an additional power supply. That supply is connected to this port. On EPR units, Aux Power is the main power supply input. On other units the Aux Power input may be used for special applications but, in general, it is not used. The voltage required at the Aux Power input depends on the type of unit.

MODEM

This standard RJ-45 port is used to connect a standard external modem. The safe will communicate by modem at 9600 baud. The modem feature supports phone access for remote diagnostics and monitoring. This port is used only on controller (C) units.

PRINTER

This standard RJ-45 port is used to connect the printer to the system controller unit.

DATA 1

In a multi-unit system, this port is used to daisy chain data from unit to unit. On controller units, this is the only data port used. On remote units, this port connects from the previous remote unit in the data daisy chain. See also Figure 3-1.

DATA 2

In a multi-unit system, this port is used on remote units to connect out to the next remote unit in the daisy chain. See also Figure 3-1.

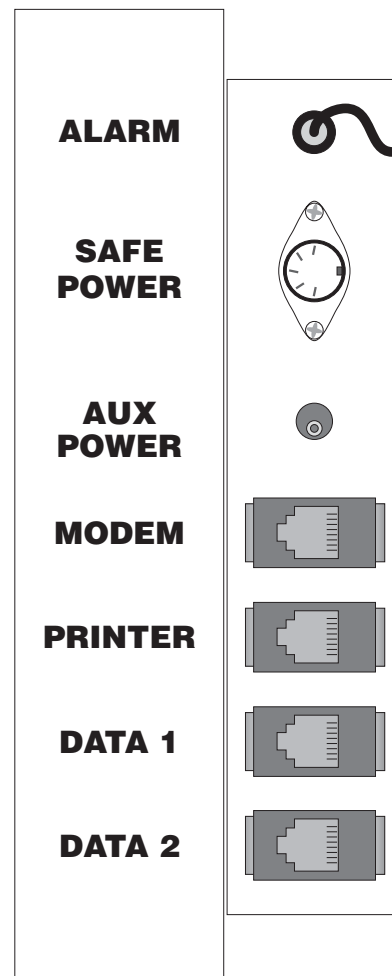


Figure 2-5: Rear Panel

AUDITLOK XLV DISPLAY PANEL

The AuditLok XLV display panel, whether mounted on the safe or a remote EPR unit, is easy to use with its fluorescent display, numeric keypad, select and action buttons. Refer to Figure 2-6 for descriptions to follow.

A—SCROLL BUTTONS

Two buttons are provided for scrolling through display options. The top scroll button scrolls up through a pick list or to the right if a line on the screen exceeds 20 characters. The lower scroll button scrolls down or to the left.

B—DISPLAY

This is an 80 character (4 rows, 20 columns) fluorescent display. This type of display can easily be read at some distance in almost any lighting condition.

C—SELECT ARROW BUTTONS

Four arrow buttons are provided, one for each row of the display. When a list is displayed, these arrow buttons are used to make selections.

D—NUMERIC KEYPAD

This is a standard numeric keypad. When you need to enter a number or make a numeric selection, enter the number as if you were pressing a calculator or dialing a phone. Note: It is often necessary to use the ENTER key after entering a number sequence on the keypad.

E—CLEAR BUTTON

When entering a number, use the CLEAR button to back up a space or delete a mistake.

F—ENTER BUTTON

When entering a number, use the Enter button to accept the number sequence you typed.

G—KEY PORT

The key port is used to read electronic keys. Electronic keys are a type of identifier used to gain system access.

H—ACTION BUTTONS

Not all action buttons apply to every safe, but any given system could use almost any combination of action buttons depending on the application.

LOAD: On D8 units, this button is used when adding tubes to the dispensing system.

VEND: On D8 units, this button is used to get change tubes from the dispensing system.

DROP: This button is used when making manual or validator drops. Most safes offer one or both methods of making drops.

UNLOAD: On D8 units, this button is used to empty all tubes from a column for maintenance.

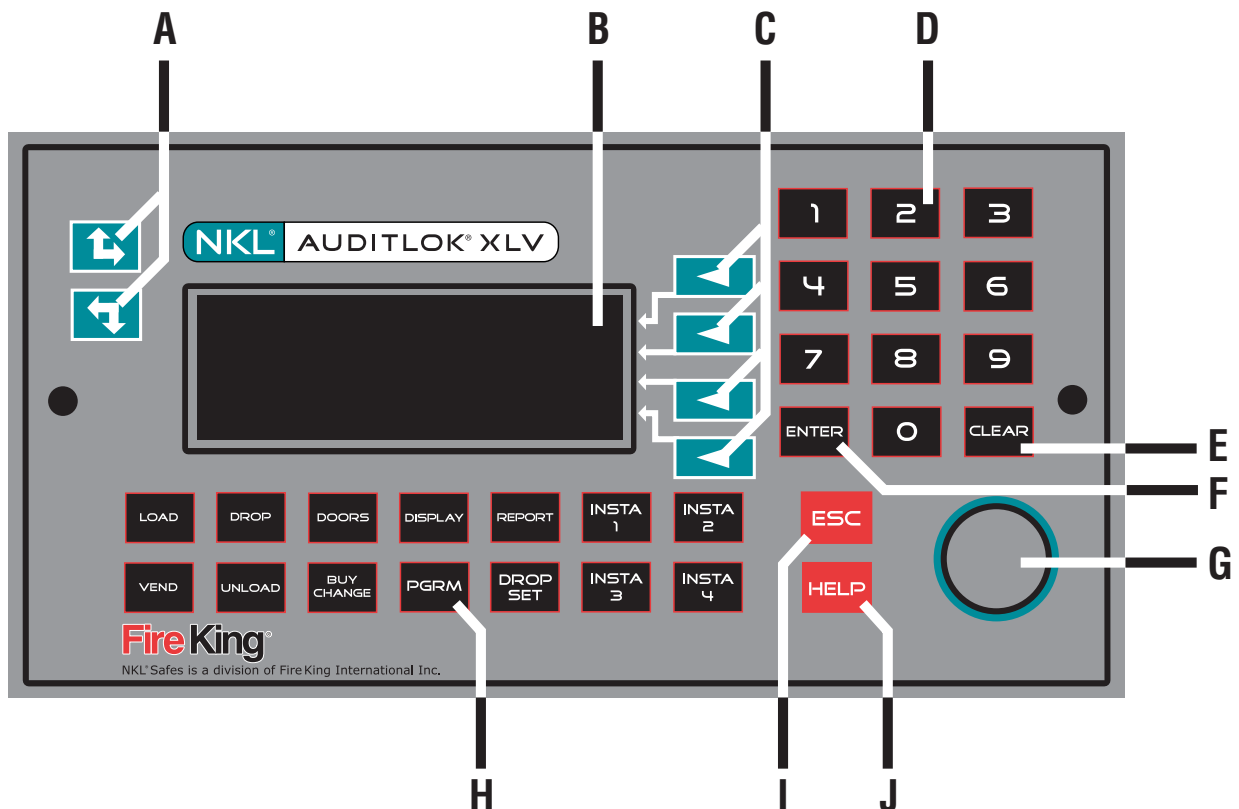


Figure 2-6: AuditLok XLV Keypad & Display Panel

DOORS: This button is used when opening safe doors.

BUY CHANGE: To use this button, the system must include both a dispensing safe and at least one validator. This button is used when purchasing change from the dispensing unit by making a drop to a validator.

display: This button is used to check system information such as time and date, various delays that may be in progress, and obtain general information about your system including how to contact Technical Support.

PGRM: The program button is used to enroll or modify users, or to edit system setup parameters.

DROP SET: This button is used with V1 or V2 units to setup Insta-Drop or Extended Drop operation.

INSTA 1, 2, 3, 4: These buttons are used with V1 or V2 units when using the Insta-Drop feature. The purpose is the convenience of making one-button validator drops while maintaining audited accountability.

I—ESC BUTTON

At almost any point in almost any procedure, you may use the ESC button to back up a full step. Also, the ESC button is used to allow positive user completion of certain activities such as loading tubes or making validator drops.

J—HELP BUTTON

The HELP button is used to check device and component status. Refer to Section 8 for complete information on how to use HELP to diagnose system problems.

3 INSTALLATION

SITE PREPARATION

Before installing, make sure there is adequate clearance for the body and base of the safe as well as proper electrical power.

SPACE REQUIREMENTS

Space must be provided for mounting the safe, plus base (if used), plus required air gaps for access. Side space is required in order to allow access to critical rear-mounted connection. Swing clearance is required to allow full access to the interior.

- Clear Opening: 4 Inch Side Clearance (Hinge Side)
- Clear Opening: 6 Inches Rear Clearance
- 170° Door Swing Clearance
- Body and Base Height Clearance

POWER REQUIREMENTS

A standard NEMA 15A, 115 V_{AC} grounded outlet must be provided within 6 feet of the hinge side of the safe. The unit may share its AC circuit with other point of sale electronic equipment, but must not be on the same circuit as rotating machinery such as a cooler or other refrigeration equipment.

- Standard 115 V_{AC} Grounded Outlet
- No Rotating or Heavy Loads on AC Circuit
- Outlet Within Six Feet of Hinge Side
- Do NOT Use with a Power Extension Cord.
- Do NOT Connect Other Loads to the Safe's Surge Protector.
- Dedicated line or UPS (UPS must be accessible)

WARNINGS

The following items are critical to safety, security and proper operation of the completed installation.

- Do not touch exposed electronics.
- Service should only be provided by authorized personnel.
- The use of a grounding strap is required when in contact with internal electronic components to prevent damage to components.
- Follow all installation and programming procedures carefully.
- Do not attempt to enroll any users on the safe until all programming is complete.
- The data bus between remote units must be connected to the controller unit in the same order at the time of initial configuration is at final installation.

INSTALLATION PROCEDURE

The base, if used, must be installed first. Before proceeding, make sure the space and power requirements listed above are met for the mounting location. Once the base is fully installed, the safe is placed in position and bolted to the base.

REMOVE THE SAFE FROM THE BASE OR PALLET

1. Remove wrapping material from the safe.
2. Locate the power supply that comes with the safe. Unwrap the power supply.
3. Plug the power supply unit's cable into the power supply jack at the rear of the safe.
4. Plug the standard grounded power plug into a standard 115 V_{AC} outlet.
5. "C" Units with installed display: Looking at the display, wait for the display electronics to stabilize (about 60 seconds).
6. "C" Units with external display: Unpack and connect the remote display. Use a standard RJ45-RJ45 cable connected from DATA1 on the safe to DATA1 on the display. Connect power to the remote display.
7. "R" Units: Refer to Initial Configuration Programming for data connection and lock configuration instructions.
8. Press the "DOORS" button.
9. Enter "0" for the User Number, then press "ENTER."
10. Enter "1536" as the PIN for User Number 0.
11. Press the "DOORS" button again.
12. When prompted whether to remove cash, select NO.
13. Select the name of the outer door lock when prompted (if long numbers appear instead of door names, select the first item listed).
14. If there is a delay, repeat steps 8 through 13 when the delay ends.
15. Open the safe door.
16. Obtain Operator's Manual and any additional documentation from the interior of the safe. You will need the Operator's Manual to complete system programming. Other documentation may also be inside the safe which is important to installation, programming or training.
17. Unbolt the safe from the pallet (or base, if pre-installed) by removing the four 5/8 inch lag bolts. *Note: If the safe door remains open for more than a few minutes, it will sound an audible alarm. Remove power to silence the alarm.*

INSTALLATION OF BASE (OR SAFE WITHOUT BASE)

1. Remove any packing material from the base/safe.
2. Obtain the grout kit and lag bolts from inside the safe and set aside. Review grout kit instructions.
3. Position the base/safe in the installation location.
4. Using a pencil, mark the mounting hole locations on the floor.
5. Remove the base/safe and set aside.
6. Drill four 7/8 inch holes to a depth of at least 3 3/4 inches. The holes must be clean. Use a vacuum to clean the holes. *Do not use water to clean the holes.*
7. Mix the grout according to the instructions provided.
8. Pour the grout into the four holes, filling each to about 2/3 depth.
9. Position the base/safe, carefully aligning the mounting holes.
10. Insert the threaded 5/8 inch threaded rods into the holes by slowly turning by hand until the rods are fully inserted. The washer and nut should be flush with the base floor. *Do not tighten.*
11. Let the mixture set for at least 1 hour. Tighten the rods as needed. The grout will cure in 24 hours.

SAFE INSTALLATION ON BASE

1. Move the safe onto the base.
2. Make sure that the safe power supply is plugged into the designated outlet. The power supply and cable connections should be accessible. Connect the other end of the power supply cable into the power supply jack at the rear of the safe. Check that the safe's display is powered up.
3. Using the threaded rods provided, bolt the safe to the base.
4. Install printer, modem and alarm wiring as needed.
5. Perform initial configuration programming (if not already complete).

WARNING: If a base is used, allow adequate time before installing the safe on the base. Attempting to position the safe on the base before the grout fully cures may result in the base separating from the concrete.

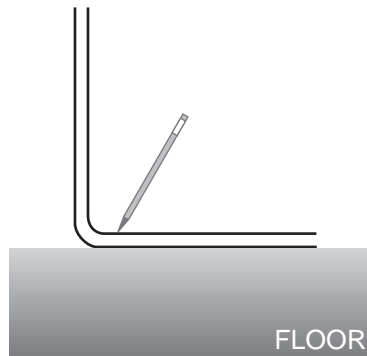


Figure 3-1: Position the Base/Safe, Mark Rod Locations

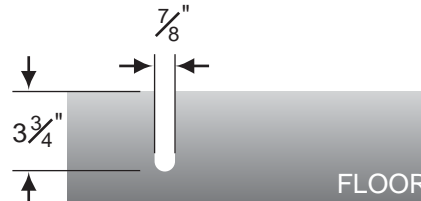


Figure 3-2: Drill 7/8 Inch Holes

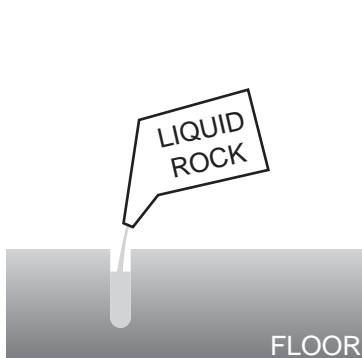


Figure 3-3: Fill 2/3 Depth with Grout Mix

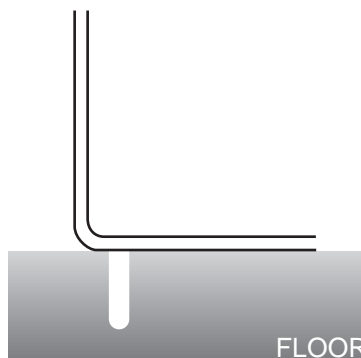


Figure 3-4: Position Base/Safe

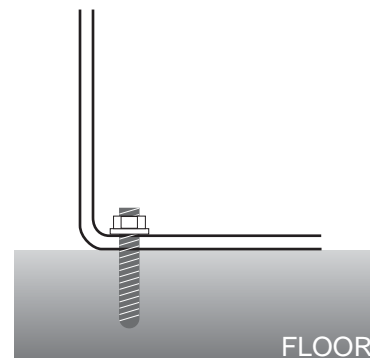


Figure 3-5: Insert Threaded Rods

INITIAL CONFIGURATION PROGRAMMING

This section applies to all Controller and Remote safes using AuditLok XLV electronics. D8X units are not programmable (refer to the D8X Operator's Manual for final setup instructions). Depending on the situation, it may be desirable to perform all configuration programming prior to unbolting safes from their pallets and installing. You must connect and program any remote units in the system before removing them from their pallets and physically installing. Note that until the first user key is enrolled, the master administration code is USER 0 with PIN 1536. Once the first user is enrolled, this initial user code will cease to work. Make sure you complete all programming before enrolling any users. For specific configuration settings, refer to customer setup instructions. Customer setup instructions may be provided with the unit, or may be available directly from the dealer or corporate loss prevention manager. If there are no printed instructions, you must obtain the setup instructions directly from the corporate loss prevention manager, franchise operations management, or business owner.

CONNECTING DATA TO REMOTE SAFES

1. Complete unpacking of all units.
2. Apply power to all units.
3. Press "PGRM."
4. Enter user number "0" and press "ENTER."
5. Enter PIN number "1536."
6. Press "PGRM" again.
7. Select "DEVICES."
8. Select "ADD DEVICES."
9. **WARNING:** Connect only one remote unit at a time.
10. When the screen prompt "ADD DEVICE NOW" appears, connect DATA1 on the controller unit to DATA1 on the first remote unit. The screen should show the added device on the scrolling device list.
11. If additional remote devices are being added, select "ADD DEVICE" again.
12. Connect from DATA2 of last remote unit to DATA1 of new remote unit. The screen should show the added device on the scrolling device list.
13. For any additional remote units, repeat steps 11 and 12 until all remote safes are connected to the data bus.
14. Perform hardware installation of bases (if used) and safes per Section II.
15. When all hardware is in place, ensure that power is restored to all units and that the data bus is connected to all units. Verify that all units respond to the controller.

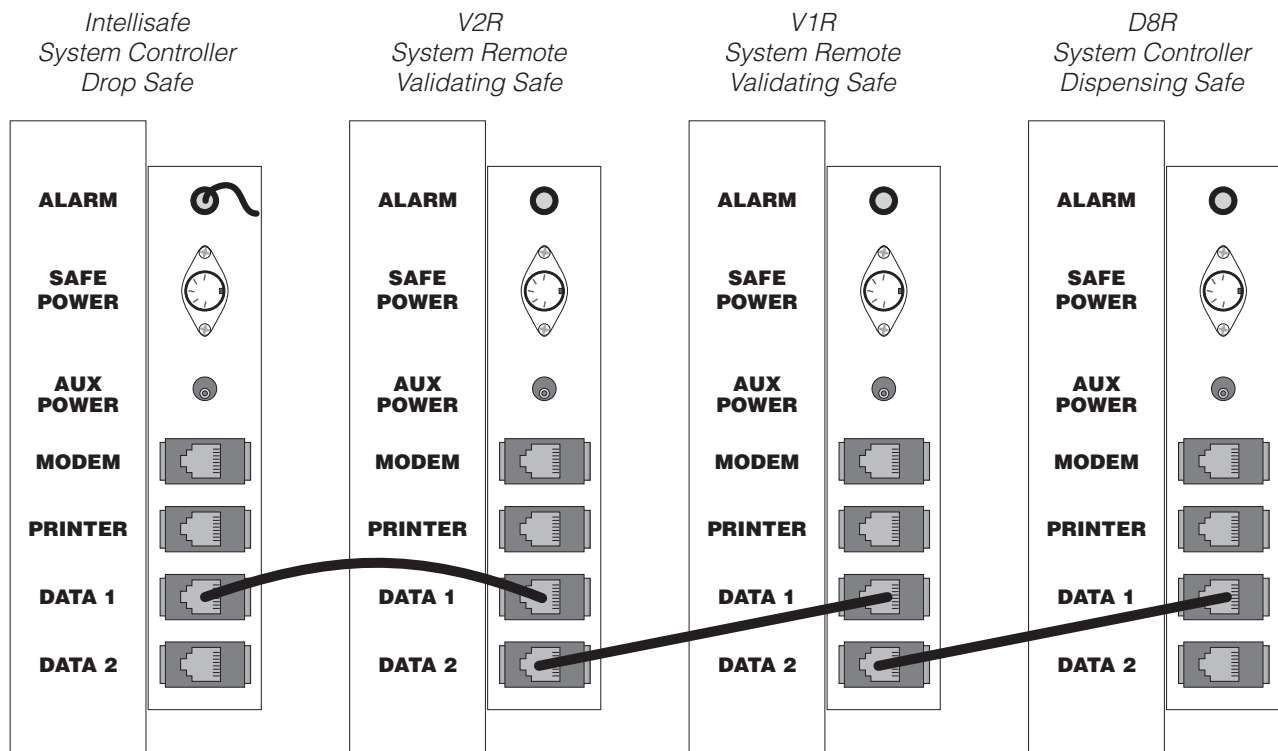


Figure 3-6: AuditLok XLV System Data Interconnection

CUSTOMER REQUIREMENTS

Specific parameters for this system may be provided on a setup form with this unit. If no customer settings are provided with this system, contact the dealer or appropriate corporate loss prevention or operations manager to obtain site specific parameters. Configure the unit to these customer defined settings by following the procedures in the following sections. **The following parameters need to be specified and programmed into the system:**

- Names for each lock (i.e. OUTER DR V1R1, OUTER DR V1R2...).
- Time delays for locks, vending, and unloading.
- Timelocks for each lock.
- Group assignments for each lock.
- Choice of single or dual user access for each lock.
- Fire time for each lock (minimum 1 minute) on remote units.
- Vend assembly names (i.e. MAIN VEND D8C).
- Vend assembly column values (default: \$.50, \$2.00, \$5.00, \$10.00, \$10.00, \$20.00, \$20.00, \$40.00 in columns 1 to 8, respectively).
- Vend assembly column group assignments (Group 0 default).
- Vend assembly vend delay.
- Vend assembly unload delay.
- Validator names (i.e. VAL 1 V1R1, VAL 1 V2R3, VAL 2 V2R3...).
- Names for each Box Cash location (REG 1 V1R1, DRIVE THRU V1R2, DELI V1R3...).
- Combinations of Box Cash that form Macro Cash and names of Macros.
- Store Number.
- Account Number.
- Whether/When to auto-run the Grand Z daily report.
- Name of business (Idle Text).
- PIN parameters: length (4 or 6 digits), life (days), auto inactivate (months) and auto-delete (months).
- Names of default user permission levels (six levels).
- Default permissions (or more specifically, deviations from standard defaults).

CONFIGURE DEVICES

Refer also to Section 5.

- Press "PGRM."
- Enter user number "0" and press "ENTER."
- Enter PIN number "1536."
- Press "PGRM" again.
- Select "DEVICES."
- Select the first remote unit listed.
- Select "LOCKS."
- Select "NAME."

- Enter a name for the lock (i.e. OUTER DOOR V1R1).
- Select "SET LOCK."
- On all R Units: set "FIRE TIME" to "01" minutes (longer if required).
- Continue configuring lock parameters for this lock until all lock parameters are set.
- If this unit is a D8C/D8R, Select "VEND" from the device's component screen. Set each vend parameter available, starting with naming the vend assembly (ie. D8C1 VEND). Make sure each column is set to the correct per-tube value, then set group assignments per column, vend delay, and unload delay times.
- If this unit is a V1 or V2, select VALIDATOR from the device's component screen. Set each validator parameter available. Give each validator an appropriate name (i.e. VAL 1 V1R1, VAL 1 V2R2, VAL 2 V2R2...). Unless otherwise specified, validators will default to 4-way acceptance. Enable bookmarks if desired.
- Repeat above for each unit in the system.

CONFIGURE SYSTEM

Refer also to Section 5.

- Press "PGRM."
- Enter user number "0" and press "ENTER."
- Enter PIN number "1536."
- Press "PGRM" again.
- Select "CASH."
- Create BOX CASH for each safe. When creating (adding) Box Cash, you must name the cash (i.e. REG 1, DRIVE THRU, DELI...) as well as define the entry means (validators in the unit) and the lock that controls the exit means for the money.
- Create MACRO CASH per customer requirements.
- Select "SITE" to configure all Site parameters (site number, account number, end day, accounting, idle text, daylight savings, and currency) per customer requirements.
- Select "TIME/DATE" to set the system clock (time, date).
- Select "USERS" to set user related system parameters (PIN setup and permissions) per customer requirements. DO NOT ENROLL ANY KEYS OR USER ID until the system is fully installed, programmed, and tested.

EXTERNAL DEVICES

After installation of safe hardware, connect printer, modem and alarm outputs as needed.

4 OPERATING PROCEDURES

EXAMPLE SYSTEM

Although your system is probably different than the one shown below, this example system is used to illustrate various procedures in the pages to follow. This example system includes one controller (D8C) and two remote units (V2R and V1R).

ASSUMPTIONS

These instructions assume that your system is properly setup, it is operating properly, and that the user has the required permissions. These instructions also assume no errors (operator or hardware) occur while following procedures, and that procedures are followed as written.

TYPES OF PROCEDURES

For the purposes of this manual, procedures fall into three main categories based on types of users. Operators are users who typically have access to vend and drop related features. Managers are users who have the added permissions to load and unload columns, open doors, run reports, and enroll or edit users. Access to advanced configuration programming is limited to senior loss prevention, service, or factory personnel. For ease of reference, procedures are divided by user type. This section contains those procedures used by those enrolled users described above as “operators” or “managers.” For information regarding configuration programming, refer to Section 5.

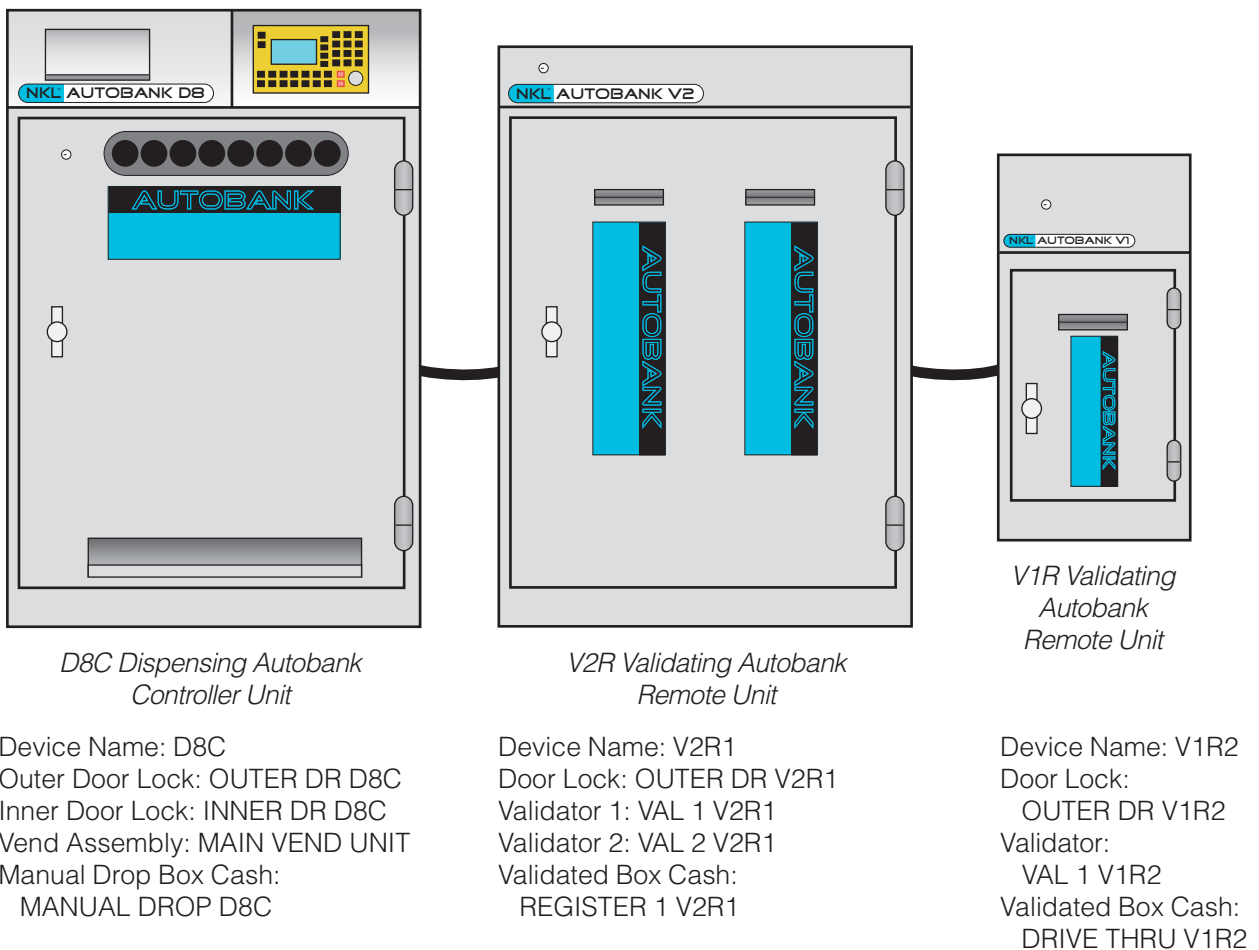


Figure 4-1: Example System

DOOR ACCESS

Use this procedure when opening doors, including withdrawing money from the safe for bank deposit. If you use an armor car service, refer to the procedure for Armor Car Door Access.

STEP BY STEP

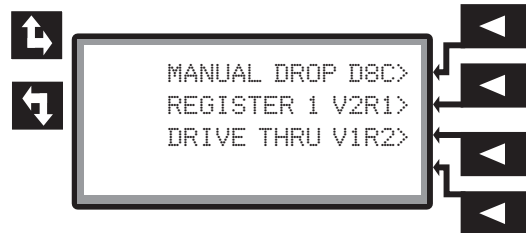
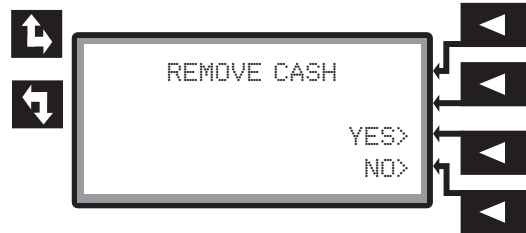
1. Press DOORS.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.¹
4. When prompted to remove cash, select YES or NO as desired. By selecting YES, you will zero the amount in drops for the cash behind the door(s) you open.²
5. A list of cash (or doors) available to you will appear. Scroll, if necessary, until the name of the cash or door you want is listed. Press the appropriate arrow button to select your choice.²
6. If the requested cash or door has a delay, wait for the delay to expire. Once the delay has expired, an access period will begin and the safe will beep until you press a button. Repeat Steps 1 through 5 above.
7. Lock solenoids will energize and unlock for only a few seconds. Open the door(s) immediately, when instructed. For remote units, go to the desired unit and press the door fire button (or turn door key), then immediately open the door. Repeat as needed for each additional door of the cash macro.
8. If you are accessing an interior door, you must first open the outer door as instructed, then open the inner door when prompted.
9. If you chose to remove cash, a deposit receipt will print automatically when the door opens. You will be "charged" for the drop(s) removed.
10. Shut all doors as soon as your business inside the safe is done. The door will automatically relock. Failure to close the door in a timely manner will result in a door alarm and will show up on the audit trail as a violation.

¹Add 1 to your PIN to activate the silent robbery "duress" signal output from the safe. For example, if your PIN were 1-2-3-4, using the PIN 1-2-3-5 will send the duress signal. Avoid using the "9" as the last digit of your PIN because the duress code would then require you to change two digits, making it more difficult to remember during a robbery.

²Once a door delay is in progress, you may abort the door request by repeating this procedure and making exactly the same choices for cash removal and door/cash choice.



Log In: Action Button + Identifier + PIN



Repeat Above



Open Door



ARMORED CAR DOOR ACCESS

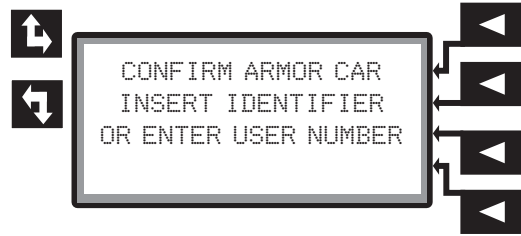
Use this procedure when withdrawing money from the safe for an armored car service.

STEP BY STEP

1. Press DOORS.
2. Present Armor Car Key.
3. When prompted, present key (or enter User ID and press ENTER to verify armor car key).
4. Enter PIN.
5. A list of cash available to you will appear. Scroll, if necessary, until the name of the cash you want to remove is listed. Press the appropriate arrow button to select the desired cash.
6. Lock solenoids will energize and unlock for only a few seconds. Open the door(s) immediately, when instructed. For remote units, go to the desired unit and press the door fire button (or turn door key), then immediately open the door. Repeat as needed for each additional door of the cash macro.
7. If you are accessing an interior door, you must first open the outer door as instructed, then open the inner door when prompted.
8. A deposit receipt will print automatically when the door opens. You will be "charged" for the drop(s) removed.
9. Shut all doors as soon as your business inside the safe is done. The door will automatically relock. Failure to close the door in a timely manner will result in a door alarm and will show up on the audit trail as a violation.



Armor Car Key Initial Log In



Log In: Action Button + Identifier + PIN



Open Door



VEND

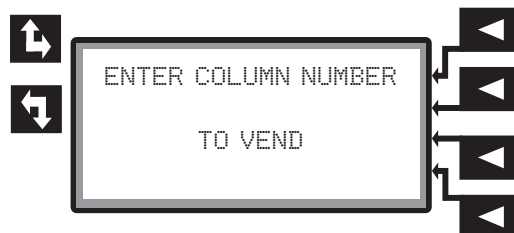
Use this procedure to get change from a D8 dispensing safe for your till. The person making the vend will be "charged" for the vend.

STEP BY STEP

1. Press VEND.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. Select the column number to vend from (1 to 8, left to right across the front of the D8).
5. Retrieve the tube from the dispensing tray at the bottom of the door. A vend receipt will print automatically.
6. When you vend, a short delay prevents immediately vending again until the vend delay is finished.



Log In: Action Button + Identifier + PIN



MANUAL DROPS

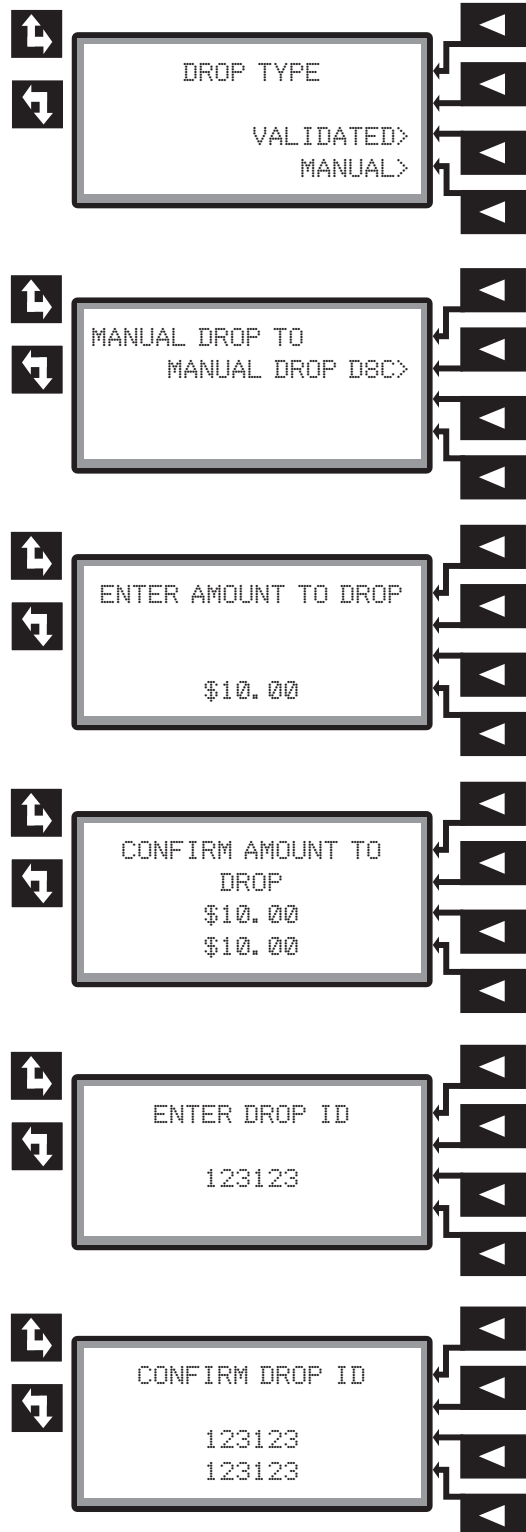
Use this procedure to make a manual drop via your manual drop drawer.

STEP BY STEP

1. Press DROP.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. When prompted to for drop type, select MANUAL.
5. Select the cash location where you are making your drop.
6. Enter the amount of money you are dropping.
7. Re-enter the amount of money you are dropping as confirmation.
8. Depending on your configuration, you may also be required to enter a DROP ID number, then confirm.
9. A drop receipt will print automatically. You will be "credited" with the amount of the drop. *Most businesses require you to place the drop receipt in the envelope with the money before physically making the drop. Consult your manager regarding your business procedure.*



Log In: Action Button + Identifier + PIN



Place receipt in envelope and make drop

VALIDATOR DROPS

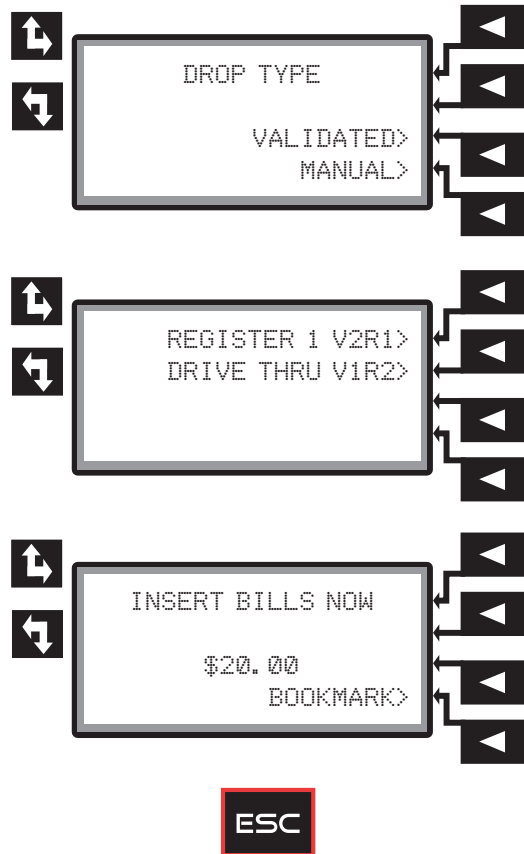
This is the standard procedure for making validated drops. If you wish to use the Extended Drop or Insta-Drop features, refer to the applicable instructions.

STEP BY STEP

1. Press DROP.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. When prompted for drop type, select VALIDATED.
5. Select the cash location where you are making your drop.
6. Insert bills as needed to the chosen location.
7. To insert a bookmark, simply select BOOKMARK and insert your bookmark to chosen validator(s).
8. To end the drop, press ESC.
9. A drop receipt will print automatically. You will be "credited" with the amount dropped.



Log In: Action Button + Identifier + PIN



BUY CHANGE

Use this procedure to combine vending and validating for immediate access to till change.

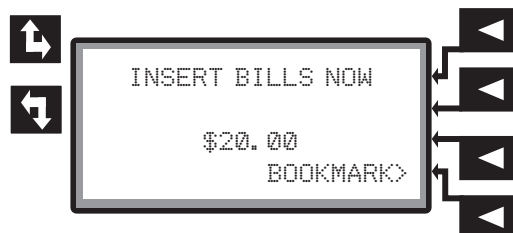
STEP BY STEP

1. Press BUY CHANGE.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. Select the cash location where you are making your drop.
5. When you have completed your drop, press VEND to obtain change.
6. Select the vending unit to vend from (if required).
7. Select the column to vend from. *Tube value must be equal to or lesser than the net drop amount.*
8. If you still have a positive net drop amount, you may vend again until your net drop amount reaches zero.
9. A Buy Change receipt will print automatically when the drop amount reaches zero or immediately upon pressing ESC.
10. The vend delay will start. *The vend delay need not be satisfied in order to use the Buy Change feature again.*

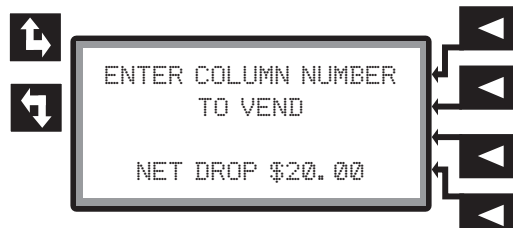
BUY
CHANGE



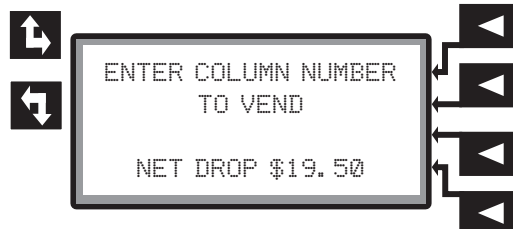
Log In: Action Button + Identifier + PIN



VEND



1



ESC

INSTA-DROP

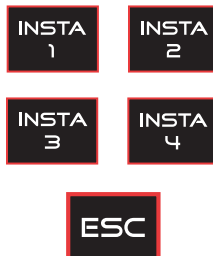
Insta-Drop is a convenience feature which allows a user one-button access to make validator drops during the day. Log into an Insta-Drop button, then use the button during the day to make drops. At the end of your shift, simply log out to make the button available to other users.

STEP BY STEP: LOG INTO INSTA-DROP

1. Press DROP SET.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. When prompted, select INSTA DROP SET.
5. Insta-Drop buttons 1 to 4 are listed top to bottom. Select an available button to log into.
6. Select an available validator to associate with your Insta-Drop button. You are now ready to use your Insta-Drop button.

STEP BY STEP: USING INSTA-DROP

1. Press your INSTA # button.
2. Insert bills into your validator.
3. Press ESC to complete drop. A receipt will print automatically.



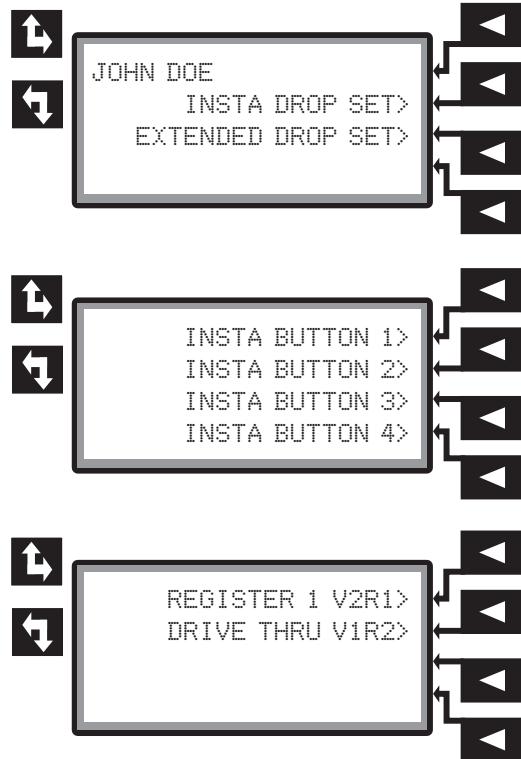
STEP BY STEP: LOG OFF INSTA-DROP

1. Press DROP SET.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. When prompted, select INSTA DROP SET.
5. Insta-Drop buttons 1 to 4 are listed top to bottom. Select the button you are currently logged into.
6. Select REMOVE to confirm you want to log off the Insta-Drop button.

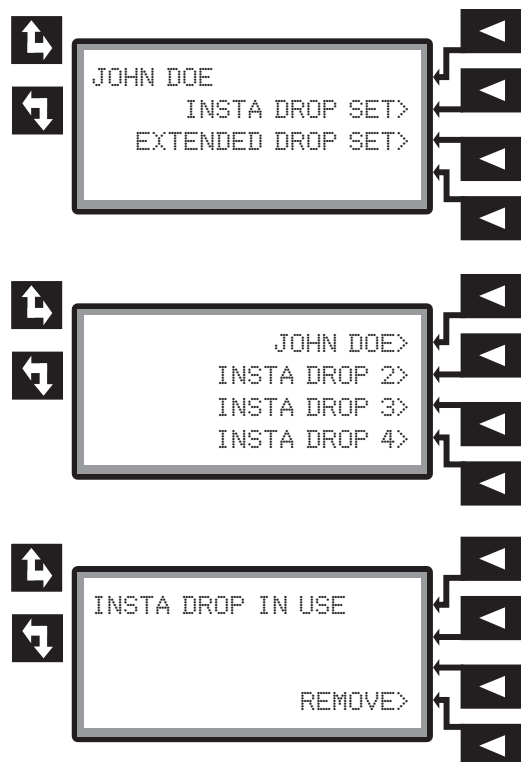
DROP SET



Log In: Action Button + Identifier + PIN



Log In Again



EXTENDED DROP

Extended Drop is a convenience feature which allows a user to log onto a validator and make drops at will during the day. The validator will remain active at all times until you log out of Extended Drop. All bills dropped into that validator are credited to you. At the end of your shift, simply log out to make the validator available to other users.

STEP BY STEP: LOG INTO EXTENDED DROP

1. Press DROP SET.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. When prompted, select EXTENDED DROP SET.
5. Select an available validator.
6. If you have sufficient authority, you may be able to log others on and off. If so, you will also have to select a user (such as yourself) to assign to the Extended Drop function on the selected validator. You are now ready to make drops at will to that validator.

STEP BY STEP: USING EXTENDED DROP

1. Insert bills into your validator. Note: If anyone else makes a drop to that validator, you are the one who will get credit for the drop.

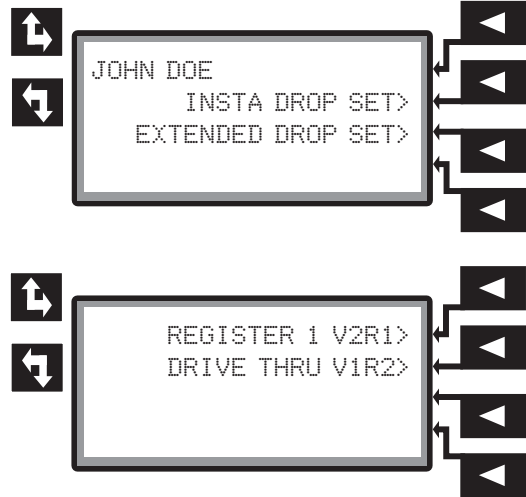
STEP BY STEP: LOG OFF EXTENDED DROP

1. Press DROP SET.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. When prompted, select EXTENDED DROP SET.
5. Select the validator you are currently logged into.
6. When prompted that Extended Drop is already in use on that validator, select CANCEL to log off Extended Drop.

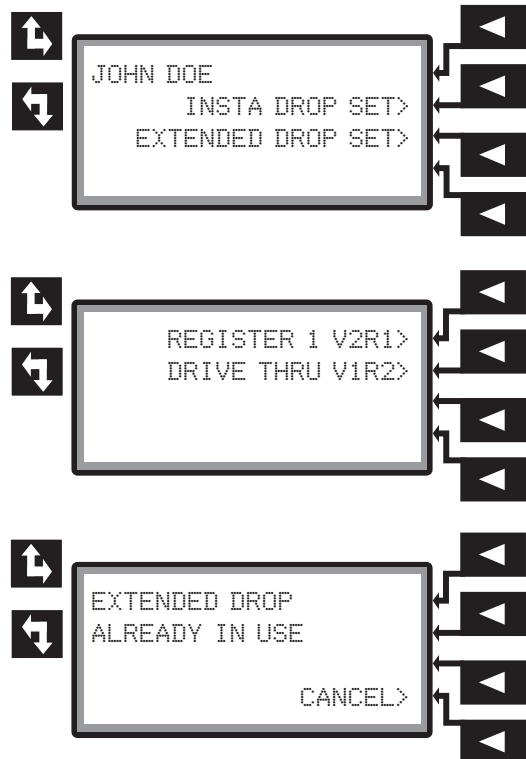
DROP
SET



Log In: Action Button + Identifier + PIN



Log In Again



CHANGE PIN

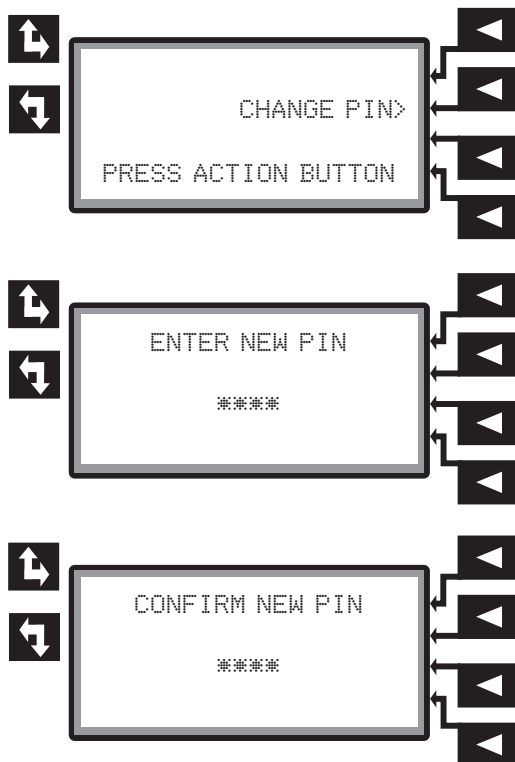
Every enrolled user has the option to change their own PIN at any time.

STEP BY STEP

1. Present key, or enter User ID and press ENTER.
2. Enter PIN.
3. When prompted to select an action button or change your PIN, select CHANGE PIN.
4. Enter your new PIN.
5. To confirm the new PIN, enter it again. Your PIN is now changed.



Log In: Identifier + PIN

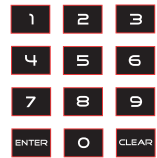


OPERATOR REPORT

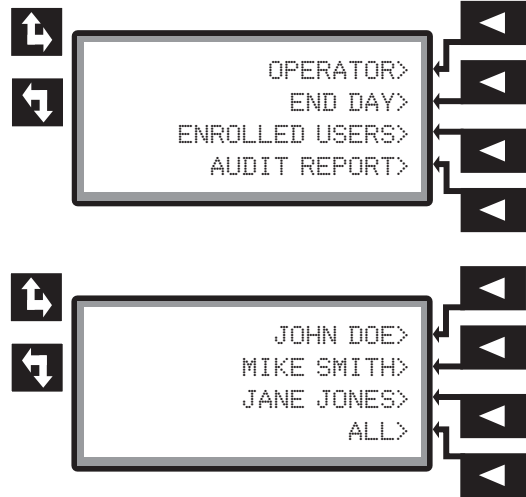
Use this procedure to run your own shift report, even if you do not have general report printing permission.

STEP BY STEP

1. Press REPORT.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. If you do not have general report printing permission, your shift report will print automatically. This is an "X" type report which does not zero net activity.
5. If you do have general report printing permission, choose OPERATOR, then select your own name to print your shift report.



Log In: Action Button + Identifier + PIN



DISPLAY

The display button is used to check the status of any delays currently in progress.

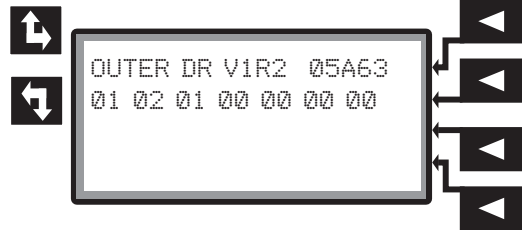


STEP BY STEP

1. Press DISPLAY.
2. The screen will display any current delays that are in effect. If there is more than one delay in effect, continue pressing the DISPLAY button until the delay you want to check is displayed..

HELP

The HELP button is used to display context sensitive help and to check system status.



STEP BY STEP

1. Press HELP.
2. The upper left corner will display the name of a component part (or serial number if unnamed) in the system. If you continue to press HELP, other components will be displayed.
3. In the upper right corner a code will appear. This data code will constantly change when you are viewing a component on the controlling unit. This data code will be static when viewing a component on a remote unit.
4. The first number on the second line identifies the unit. Unit 00 is always the controller. Units 01 through 31 are remote units 1 through 31, respectively.
5. The second number in the second line identifies the component number within the unit. For example, if the first component is a validator, it will be identified as component 00. In the example above, the third component (identified by the number 02) is displayed.
6. The third number in the second row identifies the type of component you are viewing. Component type 01 is a lock, component type 02 is a validator, and component type 03 is a vend assembly.
7. Other numbers on the second line and any data below the second line may be ignored.
8. If you are unsure whether a device is working properly, check that all components are found by running this useful diagnostic. It verifies all components are found on all devices.

LOAD

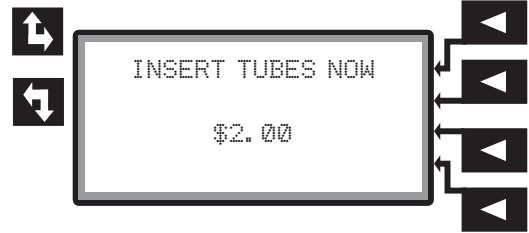
Use this procedure to add tubes to the dispensing system of a D8 for future vending. Failure to use this procedure will result in inability to vend tubes.

STEP BY STEP

1. Press LOAD.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. Move the tube Lock to the unlocked position.
5. Load tubes as desired. Watch the display to verify a correct tube count.
6. When done loading, press ESC to exit the procedure and print your load receipt. You will be "credited" for the tubes loaded. Double-check the load receipt to verify accuracy.
7. Return the tube Lock to the locked position.

A black rectangular button with the word "LOAD" in white capital letters.

Log In: Action Button + Identifier + PIN

A black rectangular button with the word "ESC" in white capital letters.

UNLOAD

Use this procedure to empty an entire column of tubes to clear the tube totals. This procedure is performed in order to correct tube count errors or extract tubes loaded in error.

STEP BY STEP

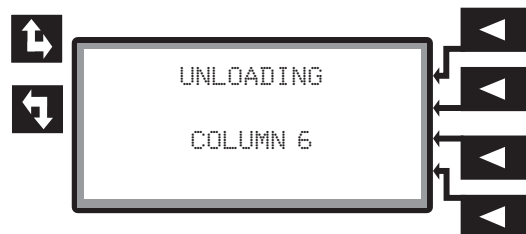
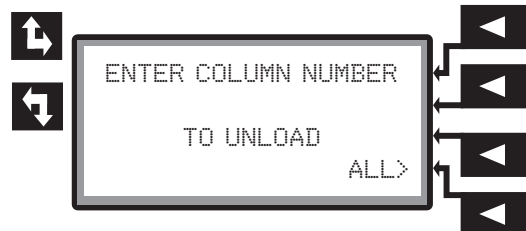
1. Press UNLOAD.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. An unload delay will begin. At the end of the delay, repeat steps 1 to 3.
5. Enter a column number from the keypad. To unload all columns at once, choose ALL using the appropriate select arrow button.
6. An unload receipt will print automatically and you will be "charged" for the unloaded tubes.



Log In: Action Button + Identifier + PIN



Log In: Action Button + Identifier + PIN



PRINTING REPORTS

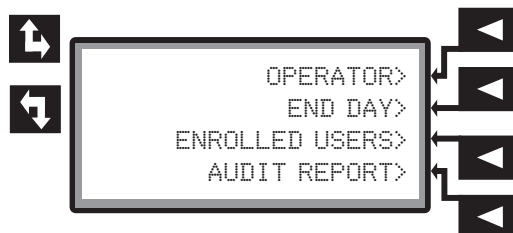
Use this procedure to print any type of report. Before printing a lengthy report such as an audit trail or enrolled user report make sure the printer has enough paper. For complete descriptions of reports refer to Section 7.

STEP BY STEP

1. Press REPORT.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. Select the type of report to print. Note that you will have to scroll down to access additional reports, such as the Config Report.
5. If you select OPERATOR, choose an individual or, to run a Grand X, select ALL. A *“grand” report* is a report showing activity for all users. *“X”* refers to printing only; *“Z”* refers to printing and resetting the transactions to zero for the start of new business.
6. If you select AUDIT REPORT, enter the report period. Date format is MM/DD/YY. Time is always entered in 24 hour format.



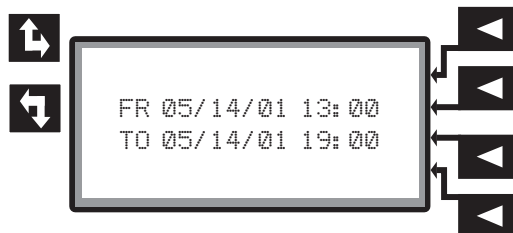
Log In: Action Button + Identifier + PIN



If You Select OPERATOR:



If You Select AUDIT REPORT:



ENROLL USER

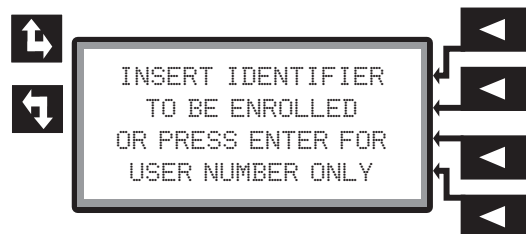
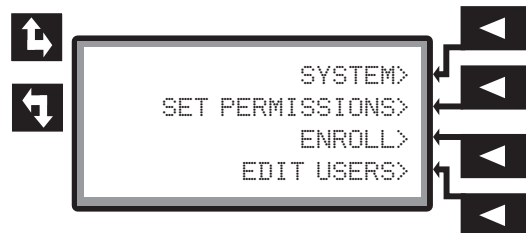
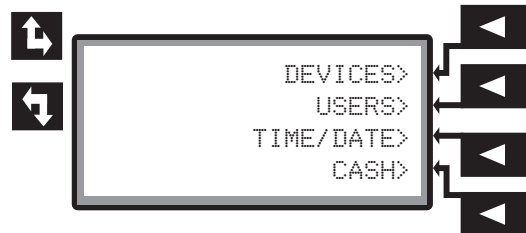
Use this procedure to add access rights for new personnel. *Note: You may not enroll any new users at a higher permission than you have unless those permissions are "burned" into the new user's key.*

STEP BY STEP

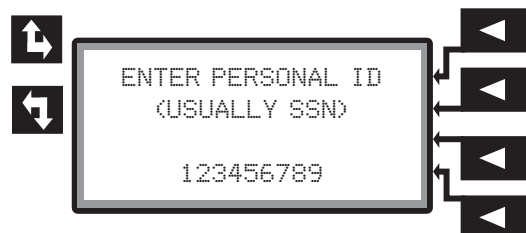
1. Press PGRM.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. From the list of available programming options, select USERS.
5. From the list of available user options, select ENROLL.
6. Present the key to be enrolled at the key reader, or press ENTER for enrolling a user with an ID Number only. If you present a key, key data will appear and you will need to select OK to continue. If you are enrolling a user without a key, note the assigned User ID Number and select OK to continue.
7. Select a permission level to assign. *You may not assign a permission level higher than your own. If the permissions are predefined by the key for you, this screen will not appear.*
8. Enter a personal ID number. This is a 9-digit number and should be the person's Social Security Number or other easy-to-remember number. If the person's key is ever lost, this number will be needed in order to generate a lost-key override. *Note: You may not duplicate personal ID numbers or edit a person's personal ID later.*
9. Enter the person's name. Use the top right select buttons to change the alpha value, then use the scroll buttons to move to the next character. Names may be up to 15 characters in length. Press ENTER to accept the name. *Note: You may not edit the person's name once it is accepted.*
10. Assign a temporary PIN to the user, then enter it again to confirm. *A temporary PIN of 1111 is recommended. The first time the user logs in, they will be required to change their PIN. This makes the user solely accountable for their PIN.*



Log In: Action Button + Identifier + PIN



Acknowledge ID Number or Key Data



Re-enter PIN to Confirm

EDIT USER STATUS

Use this procedure to delete an enrolled user, deactivate an enrolled user (if, for example, you want a user to come to you the next time they try to log into the safe), or set an enrolled user's PIN to a new temporary PIN (if, for example, a user forgets their PIN). You will want to delete a user if they are no longer employed at your location or otherwise no longer require access to the safe. To force a user to see a manager before using the safe again, or to temporarily disable the user if they are on vacation, set the user's status to Deactivate. If a user forgets their PIN, or to reactivate a deactivated user, set status to Temp Pin.

STEP BY STEP

1. Press PGRM.
2. Present key, or enter User ID and press ENTER.
3. Enter PIN.
4. From the list of available programming options, select USERS.
5. From the list of available user options, select EDIT USERS.
6. Select the name of the user to edit.
7. Choose to edit the user's status, their group assignment, or their name. Note: you may not edit another user's access to groups which you do not have access to yourself.
8. To change the user's status, select the STATUS line and it will cycle between active, inactive, and deleted. Switching a user from inactive to active will cause the user's old PIN to become a temporary PIN. Setting a user to deleted completely disables the user from the system. The user number will eventually become available once again for enrolling other users.



Log In: Action Button + Identifier + PIN



D8X OPERATION

The D8X is a simplified version of the D8 Autobank dispensing safe. The following sections detail user operation of the D8X.

ENABLE USER FEATURES

Place the ON-STANDBY keyswitch in the ON position before using any operator features. In the ON position, this keyswitch allows vending, unloading, and opening the door.



Figure 4-2: ON-STANDBY Keyswitch

DISABLE USER FEATURES

Place the ON-STANDBY switch in the STANDBY position to disable operator features. Standby prevents unauthorized use of vend, unload, and door features.

Door

To open a door follow these steps:

1. Place the ON-STANDBY keyswitch in the ON position.
2. Press DOORS.
3. Turn the Manager Key.
4. A 10 minute door delay* will count up on the display.
5. At the end of the door delay, an audible beep will sound to let you know the delay is complete.
6. Turn the Manager Key to unlock the door before the access period ends.
7. When the display indicates OPEN DOOR NOW, turn the handle and open the door.
8. As soon as your business inside the safe is done, shut the door. The safe will automatically lock.



Figure 4-3: Press DOORS

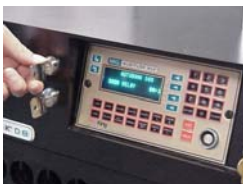


Figure 4-4: Turn Manager Key

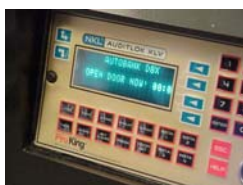


Figure 4-5: Open Door Now

*To override the 10 minute door delay, turn the Armor Car Override (ACO) Key and skip to Step 6.

VEND

Follow these steps to vend a tube of change from the safe:

1. Place the ON-STANDBY keyswitch in the ON position.
2. Press VEND.
3. Press the number button for the column you want to vend.
4. The tube will drop into the dispensing tray at the bottom of the door. Take your change from the tube and set the tube aside for re-use.
5. A vend delay will begin immediately after the tube drops. No more tubes may vend until the vend delay ends.



Figure 4-6: Press VEND



Figure 4-7: Select Column Number



Figure 4-8: Vending in Progress



Figure 4-9: Take Change

LOAD

To put tubes of change into the safe for vending, follow these steps:

1. Place the tubelock keyswitch in the unlocked position.
2. Insert tubes as desired. Be sure to put each tube in the proper column.
3. Use your D8 Dipstick to measure the number of tubes in order to verify tube quantities. When a column contains 10 tubes, no additional tubes can be loaded in that column.
4. Return the tubelock to the locked position to prevent unauthorized loading.



Figure 4-10: Tubelock Keyswitch



Figure 4-11: Loading Tubes

UNLOAD

If an error is made when loading (tube inserted in wrong column) or for whatever reason you need to remove all tubes from a column (or columns) follow these steps:

1. Place the ON-STANDBY keyswitch in the ON position.
2. Press UNLOAD.
3. Turn the Manager Key to initiate the 5 minute unload delay.
4. When the unload delay ends, an audible beep will sound and the unload access time will count down.
5. Press UNLOAD again.
6. Select the column to unload, or press the arrow select button next to ALL to unload all columns. The tubes will begin being ejected immediately. To prevent a tube jam, remove each tube as soon as it falls into the dispensing tray.
7. If you need to unload a second column, repeat Steps 5 and 6.
8. To exit the Unload procedure, press UNLOAD, then press ESC.



Figure 4-12: Press UNLOAD



Figure 4-13: Select Column



Figure 4-14: Unload In Progress

CHECKING TUBE QUANTITIES

Use your D8 Dipstick to check how many tubes are in each column:

1. Place the tubelock keyswitch in the open position.
2. Insert the dipstick into the opening at the top of the column you wish to check until the stick is stopped by a tube.
3. The number on the stick indicates the number of tubes in the column.



Figure 4-15: Counting Tubes

MANUAL DROPS

Follow these steps to make a manual drop into the safe:

1. Prepare your money and deposit slip by inserting them into an NKL drop envelope.
2. Pull out the safe's drop drawer.
3. Place the drop envelope in the drawer.
4. Close the drop drawer. The envelope will fall into the interior of the safe.
5. To verify the envelope is secure, pull the drawer back out to check that the envelope is no longer in the drawer.



Figure 4-16: Manual Drop

PERMISSION	ADMINISTRATOR	SUPERVISOR	MANAGER	ASST. MANAGER	LEAD OPERATOR	OPERATOR
Armor Car Verify	✓	✓	✓	✓	✓	
Cash Setup	✓	✓				
Clock Date	✓	✓				
Clock Daylight Savings	✓	✓				
Clock Time	✓	✓				
Device Add	✓					
Device Delete	✓					
Device Name	✓					
Display/Edit User	✓	✓	✓	✓		
Door Access	✓					
Door Alarm	✓	✓				
Door Behind	✓	✓				
Door Delay	✓	✓				
Door Dual Key	✓	✓				
Door Remote Fire Time	✓					
Door Sensors						
Door Timelock	✓	✓				
Drop Set Delete	✓	✓				
Edit Default Permissions	✓					
Edit Permissions	✓					
Edit Permission Names	✓	✓				
End Day Setup	✓	✓				
Enroll User	✓	✓	✓	✓		
Idle Text						
Modem Setup	✓	✓				
Operate Bookmark		✓	✓	✓		
Operate Door		*	*	*	*	
Operate Drop		✓	✓	✓	✓	✓
Operate Load		✓	✓	✓		
Operate Unload		✓	✓	✓		
Operate Vend		*	*	*	*	*
PIN Auto-Delete	✓					
PIN Auto-Inactive	✓					
PIN Length	✓	✓				
PIN Life	✓					
Receipt Printing	✓	✓				
Report, View Audit	✓	✓	✓	✓		
Report, Print Audit	✓	✓	✓	✓		
Report, End Day	✓	✓	✓	✓		
Report, Permission	✓	✓	✓	✓		
Report, Config	✓	✓	✓	✓		
Report, Status	✓	✓	✓	✓		
Report, System	✓	✓	✓	✓		
Report, User	✓	✓	✓	✓	✓	✓
User Fingerprint Required	✓	✓	✓			
User Key Required	✓	✓	✓			
Validator Acceptance	✓	✓				
Validator Bookmark	✓	✓				
Validator Denominations	✓	✓				
Vend Column Values	✓	✓				
Vend Delay	✓	✓				
Vend Unload Delay	✓	✓				
Vend Unload Timelock	✓	✓				
Vend Variable Delay	✓	✓				

Once your system is placed in operation, there are six default user permission levels. As shown in the chart (left), the Administrator has absolute configuration authority (less certain items configured only by the factory), but may not operate general user features such as making drop, opening doors, and so forth. The Supervisor level can configure many system parameters and may operate all user functions. Managers and above require keys to operate the safe. Assistant Managers have virtually the same authority as a Manager, but are not required to use a key. Lead Operators differ from Operators in that Operators cannot access any doors and may not verify Armor Car keys. Operators and Lead Operators also have more restricted Group access (Operators may not, by default, access some columns for vending). Note that your organization may have defined different defaults. Your system administrator can edit all user permissions.

Figure 5-2: Chart of Initial Factory Defined Default Permissions

*Access to components in assigned GROUPs.

GROUP	ADMINISTRATOR	SUPERVISOR	MANAGER	ASST. MANAGER	LEAD OPERATOR	OPERATOR
00		✓	✓	✓	✓	
01		✓	✓	✓		
02		✓	✓	✓		
03		✓	✓	✓		
04		✓	✓	✓	✓	✓
05		✓	✓	✓	✓	✓
06		✓	✓	✓	✓	✓
07		✓	✓	✓	✓	✓
08		✓	✓	✓	✓	
09		✓	✓	✓	✓	
10		✓	✓	✓	✓	
11		✓	✓	✓	✓	
12		✓				
13		✓				
14		✓				
15		✓				
16		✓				
17		✓				
18		✓				
19		✓				
20		✓				
21		✓				
22		✓				
23		✓				
24		✓				
25		✓				
26		✓				
27		✓				
28		✓				
29		✓				
30		✓				
31		✓				

Figure 5-3: Initial Factory Defined Default Group Assignments

TIME/DATE

The time and date of the system are critical to the integrity of the audit trail. See Figure 5-4.

Time/Date—Time

The system clock runs on “military” time, using a 24-hour cycle, rather than am and pm. When entering the time, remember to put in the correct 24-hour time. The separator is the character dividing minutes and hours on the display and is defaulted to a colon (:).

Time/Date—Date

The system date is entered MM/DD/YY when format is set to the same. The alternate format choice will display the date as DD/MM/YY. The separator is the character dividing day, month, and year on the display and is defaulted to a slash (/).

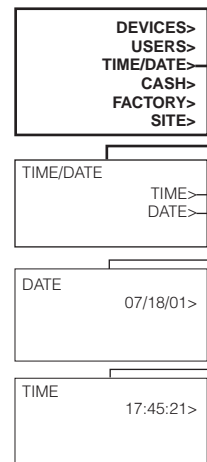


Figure 5-4: Programming Flow Chart: Time/Date

SITE

These parameters are general in nature. They include site number, idle text (the name of the business that appears on the display), and setup of automatic receipt and Grand Z report printing. See Figure 5-5.

Site—Site Number

The site number is the store number that will appear at the bottom of all receipts and reports.

Site—Account Number

The account number is a business specific number that will appear at the bottom of deposit reports (door receipts).

Site—End Day

Most businesses print a Grand Z report to zero net activity each day at or near the same time. The End Day start and end times define a period when a reminder is displayed and any enrolled user may run the end day report to clear the day's activity. You may choose to automatically print the report at a specific time (start time) each day.

Site—Accounting

By default, all receipts are enabled. If you do not wish select receipts to be printed, you may disable receipt printing for the following categories of receipt: vend, drop, load, and unload.

Site—Idle Text

Idle Text is the name of your business. This name appears on the idle display with date and time. Like any other name, it may be up to 15 characters in length.

Site—Daylight Savings

Set Daylight Savings to YES if you want your system clock to automatically update for daylight savings.

Site—Currency

Your system may be configured to track cash in U.S. Dollars or other world currency. If installed in another country, select the appropriate world currency from the choices available.

FACTORY

These are secure settings including serial identification, modem setup, and company code. Unauthorized altering of any Factory parameter could cause the system to stop operating. See Figure 5-6.

Factory—Company Code

Warning: Any change made to this setting will automatically delete all enrolled users! Company code is an identifying number used by the system to prevent a key enrolled in a safe belonging to one organization from being enrolled in the safe of another organization.

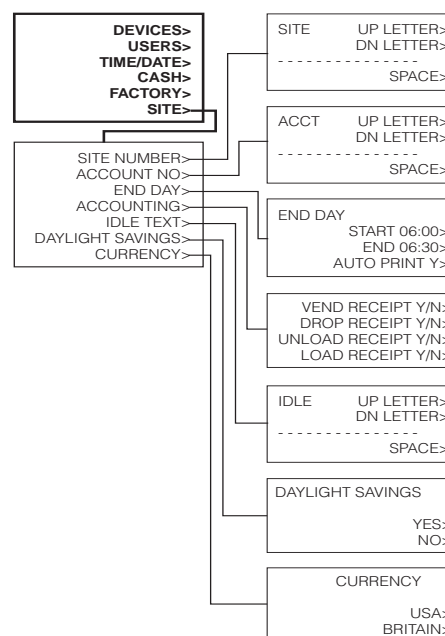


Figure 5-5: Programming Flow Chart: Site

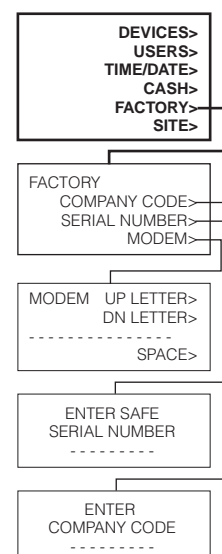


Figure 5-6: Programming Flow Chart: Factory

Factory—Serial Number

This is the serial number of the controller unit. This number is required for warranty service.

Factory—Modem

This is the name of the modem.

DEVICES

This is area of programming is very important for system operation. A device is a safe including each of its electronic components. Most device configuration is performed at the factory or at the time of installation. Device setup includes naming of devices and components, defining lock parameters, vending system setup, and validator operation. See Figure 5-7.

Devices—Add

Before a device may be used, it must be added. Before adding a new remote safe to the system, the remote safe should be powered up and ready, but not connected to the data bus. Enter programming mode and select Devices, then select Add. The screen will prompt you to add a new device. Plug in the data bus to the new remote unit and the screen on the controller should switch to a list of devices. From here, choose the new device to configure its various internal components.

Devices—Name

This is the name of the safe, itself. Each lock, vending assembly, and validator within a safe will have their own names as well as all cash storage locations.

Devices—Delete

When you select a remote device from the list, one of the options is to delete the device from the system. When you do, the controller unit erases its record of that device and stops communicating with that unit. This should only be done when a remote safe or an electronics package is being removed for service.

Devices—Locks—Name

This is the name of the lock. Each lock in the system may be given its own name.

Devices—Locks—Behind

This parameter is used to tell the system that the lock is on an internal compartment door which lies behind an external door. It causes the system to require the outer door to be open before the inner door may be opened.

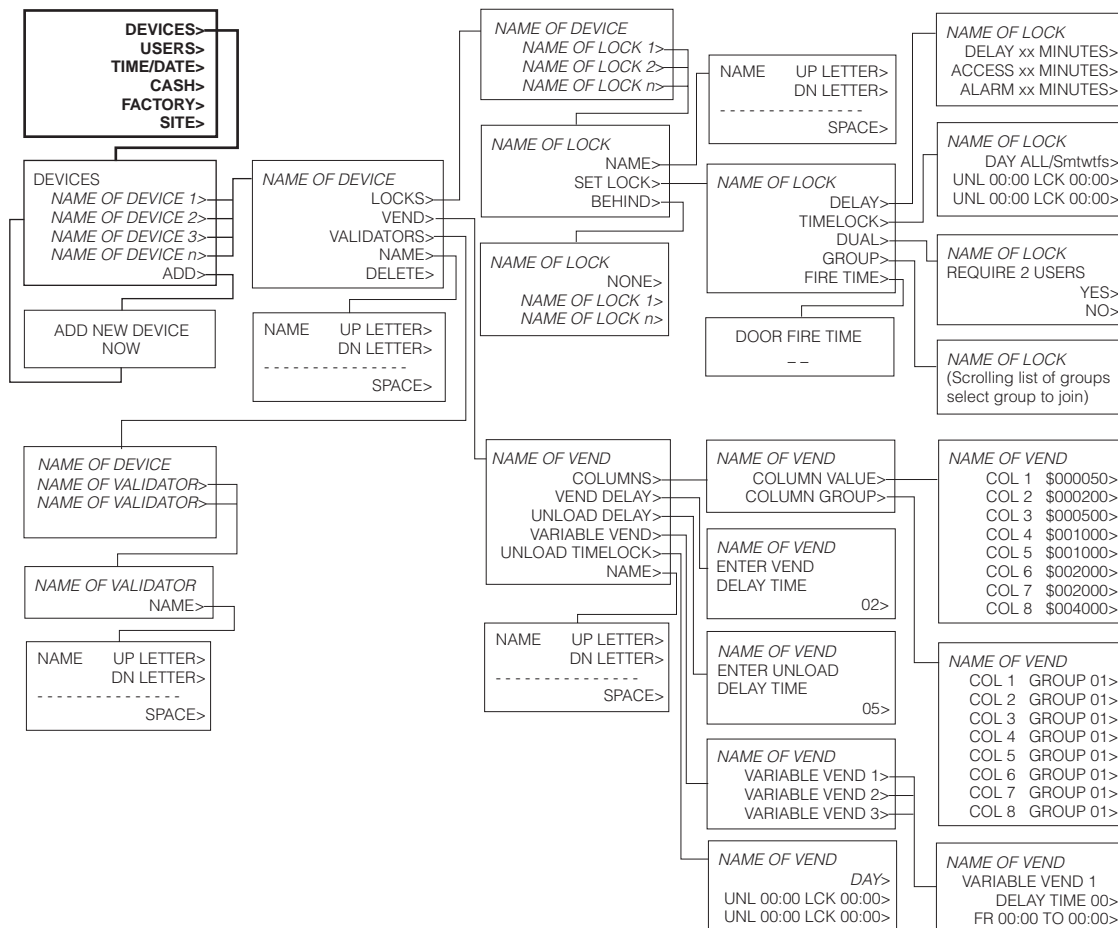


Figure 5-7: Programming Flow Chart: Devices

Devices—Locks—Set Lock—Delay

A lock delay is the time (in minutes) you must wait after starting the door delay before you are allowed to log in again and actually open the door.

Devices—Locks—Set Lock—Delay—Access

Once you log in to open a door and the door delay is exhausted, the access time is the period following the delay when you may log in the second time and actually open the door. If the door does not open in the specified time, the cycle will automatically abort and you would have to start the process from the beginning in order to open the door.

Devices—Locks—Set Lock—Delay—Alarm

Once a door is opened, the alarm time is the time the door may remain open before an alarm sounds. The alarm is logged as a user violation and creates a loud tone designed to cause the user to close the door to once again secure the safe and prevent exposure.

Devices—Locks—Set Lock—Timelock

Timelocks prevent access during specified periods. To disable timelocks, set the lock and unlock times to 00:00. To set a continuous timelock, set either timelock (there are two timelock periods available for each lock) to the same non-00:00 time.

Devices—Locks—Set Lock—Dual Key

This feature, if enabled, requires a second user to log into the safe when opening a door to validate the first user's request. The purpose is to discourage unauthorized entry.

Devices—Locks—Set Lock—Group

Each lock is assigned to a group. Users must have door permission and access permission to the lock's assigned group in order to open that lock. The use of group numbers allows management to define who has access to which lock.

Devices—Locks—Set Lock—Fire Time

Remote units may be some distance away from the controller and, hence, more than a few seconds walk from the keypad. Remote units are equipped with a "fire button" (or Medeco keyswitch). Fire time is the time, in minutes, that you have to go and push the button (or turn the keyswitch). Once you activate the fire button (or turn the keyswitch) you then have approximately seven seconds to open the door of the unit.

Devices—Vend—Columns—Column Values

A vend mechanism includes eight columns. Each column has a specific value defined for each tube in that column. When a tube is loaded or vended, the accounting for the tube is based on these values.

Devices—Vend—Columns—Groups

Column in a vend assembly are each assigned to a group. Users with vend permission must also have access to the group number of the column in order to vend from that column. The use of group numbers allows management to define who has access to which columns.

Devices—Vend—Vend Delay

This is the time, in minutes, that you must wait following a vend operation before another vend is allowed.

Devices—Vend—Unload Delay

The unload delay prevents immediate access to unloading. This delay must be satisfied before the user may log in a second time to perform the actual unload a column or columns.

Devices—Vend—Variable Vend Delay

During certain times of day, it may be desirable to reduce or eliminate the vend delay in order to meet high demand for change. Enter the start and stop time for each period, and delay for each period (in minutes).

Devices—Vend—Unload Timelock

This feature prevents unloading during specified hours.

Devices—Vend—Name

This is the name of the vend assembly.

Devices—Validators—Name

This is the name of the validator.

CASH

When money is stored in a safe, it is defined not only as a financial entity, but also by its methods of entry (manual drop or validator) and exit (door lock). Cash, then, is effectively a location with a value. Each safe has its own Box Cash. Because safes may operate together in groups or be divided by business unit or area, safes may be grouped for accounting purposes. A group of Box Cash locations is called Macro Cash. See Figure 5-8.

6 THEORY OF OPERATION

DOOR LOCKING SYSTEM

The AuditLok XLV system is, first and foremost, an electronic door locking system. It differs from its ancestors in that it allows multiple locks (as well as validating and vending components) to be operated on multiple unique and physically separate safe bodies located around a facility as if they were on one large and complicated safe.

DOOR LOCK PARAMETERS

Locks have the following software set features:

- Name
- Location (outer or inner)
- Delay (wait to open)
- Access (available to open after delay)
- Alarm (time open until alarm)
- Timelock (two access periods, each day unique)
- Group (permission restriction)
- Fire Time (remote units)
- Dual Access (single or dual user identification)

DOOR OPERATION

When an outer door opens, it must be closed again within a few minutes or an alarm will sound. When the door is opened, a mechanical detent holds the bolts back to prevent accidental hardware damage when the door is shut. The automatic detent also causes the door to automatically lock when the door shuts to prevent exposure and theft. In a robbery, the door may be opened with a duress code which allows normal access while sending a silent alarm.

LOCK OPERATION

Locks are operated directly from a Lock Board. A Lock Board is a circuit board mounted inside the safe which communicates via data bus with other system components. The cable from the Lock Board to the lock is wired differently than other RJ45-RJ45 cables. This means that must use a crossover cable as a standard cable will cause electronic failure. The Lock Board also stores lock parameters and handles communication of sensory status as well as firing the lock's solenoid. The specific type of lock depends on the application. In general, a spring bolt (knob) lock is used for inner compartments and a swing bolt lock is used for exterior safe doors.

CASH

Money, entering the safe via validator or manual drop and removed by opening a door, is tracked as "cash." From the end user's perspective, cash is simply the money in the safe. From a programming perspective, however, cash is a financial accounting entity.

Box CASH

Box Cash is the financial value associated with a physical location having an entry means (validator or manual drop) and an exit means (the lock on the door protecting the money). Box Cash must be created for every safe in the system that stores money to be tracked. Safes may have no more than one Box Cash per lock.

Box Cash Inlet Setup

Every Box Cash must have an entry means defined. For V1 units, the validator must be set as the entry means. For V2 units, both validators must be set to the same Box Cash and are both listed as entry means. For D8 or AX units, the manual drop is configured as the entry means. Note that on manual drops, the software accommodates the use of a lock on the drop drawer. Generally the drop drawer is not protected by a lock, and so no drawer should be selected when configuring a manual drop (selecting "none" as the cash inlet on a manual drop allows use of a standard unlocked drop drawer).

Box Cash Outlet Setup

Every Box Cash must have an exit means defined. This simply means that you must assign a lock to the Box Cash. The lock must be the lock on the door which protects the money. Although a Box Cash may have more than one inlet (ie. two validators), a Box Cash may only have one lock. A lock may only be assigned to one Box Cash.

MACRO CASH

In a system with more than one safe storing money, the system will track the Box Cash of each safe and may also be setup to allow access to and tracking of groups of safes. Macro Cash is a group of Box Cashes configured to function as an aggregate. This simply means that you can get reports showing the combined totals of Box Cashes as a Macro Cash. It also means you can open multiple safe doors as one evolution when removing Macro Cash for bank deposit. This is particularly handy for armor car pickup. Caution: All locks for all Box Cashes within a Macro Cash must have the same delay and timelock settings (if any).

BILL VALIDATION

V1 and V2 safes have Validators. When a validator is activated, the operator simply inserts the bill into the acceptor. The unit draws in the bill, validates its authenticity and denomination, then stacks the bill in its cassette. The bill remains in the cassette until removed for either armor car pickup or bank deposit.

VALIDATOR PARAMETERS

Bill validators, by default, are setup to accept all denominations of the applicable currency, they accept bills in any orientation (four-way acceptance), and do not take bookmarks. All of these parameters are changeable. Note that early systems do not allow any of the above parameters to be edited. Also, each validator may be given a unique name.

TYPES OF VALIDATORS

V1 and V2 safes used for strictly U.S.A. currency may have either MARS or JCM brand validators. For non-U.S.A. currencies, the JCM brand validator is normally required.

MARS Validators

MARS validators are available with either locking or non-locking 1200 bill cassettes. Cassettes are accessed by tilting the validator bracket assembly forward and releasing the validator cassette. On non-locking cassettes, a thumb release allows the cassette to be removed. On locking cassettes, a knob on the cassette is rotated to release the cassette from the validator. When replacing a cassette, the cassette must be fully installed and engaged in order for the validator to accept bills.

JCM Validators

JCM brand validators include a 1000 bill cassette. A side catch is used to release the cassette which is then pulled straight out. The JCM validator does not need to be tilted forward except for service.

VALIDATOR OPERATION

Validators (either brand) have their own electronics built in. This allows the validators to authenticate, count, and determine the denomination of bills accepted. Validators require an auxiliary power supply to meet the needs of the bill reader and stacking motor circuits.

VALIDATOR INTERFACE

Validators communicate with the rest of the system through a Universal Interface Board (UIB). Each validator must have its own UIB. The UIB translates the data from the validator to the data bus used by other AuditLok XLV components. A UIB will support either the MARS or the JCM brand validator depending on the physical connection used. This is determined by how the UIB is mounted within the main electronics assembly "can." The UIB stores critical data about the validator and provides the required identification to the system processor for the validator.

DISPENSING SYSTEM

D8 units hold up to 80 tubes in the vending mechanism. Tubes are loaded through the openings at the top of the

door and are vended out to the dispensing tray at the bottom of the door. The vending mechanism tracks tube status. This assembly also prevents unauthorized access to the tubes from the opening in the bottom of the safe door. A tube lock prevents unauthorized loading as well as any attempts to fish a tube out through the top.

VENDING SYSTEM PARAMETERS

A vending assembly, as a whole, is considered a system component. A vend assembly is identified by the name it is given. Each column on a vend assembly has an assigned tube value. For example, if Column 1 holds rolls of pennies, its value is set to \$0.50 per tube. Each column is also assigned to a Group for column specific access permission control. The vend delay function prevents vending of additional tubes immediately after a tube is vended. The unload delay prevents immediate unloading of tubes. The unload timelock prevents unloading during chosen hours.

VEND ASSEMBLY

The vend assembly body parts are constructed using patented plastics technology for tight tolerances and long sturdy life. The vend assembly consists of the plastic body, cup and rotor mechanisms, motors, main and motor vend boards, and interconnecting cables. The entire vend assembly may be removed by simply disconnecting certain RJ45 cables and four shoulder bolts.

Loading Tubes

Tubes enter through openings near the top of the safe door and pass into the top of the vend assembly. A tube lock plate must be moved to the open position to allow tubes to be loaded. The tube lock plate is moved using a Medeco mechanical key switch and cam assembly mounted directly to the door. Optic sensors on the main vend board track tubes as they are loaded.

Vending Tubes

Each pair of columns share a cup and rotor mechanism along with a motor and associated hardware. The direction of rotation determines which column vends. Optic sensors track rotor motion to precisely control the vending operation. An output sensor, consisting of a transmitter board and a receiver board mounted on opposite sides of the vend assembly, verifies that tubes fall during vending operations.

SPECIAL CASE: D8X

The D8X is a unique product. This unit does not have a CPU, nor can it be connected to a system controller as a remote unit. The vending hardware is identical to other D8 models, except that the main vend board is programmed differently. To the end user, the D8X is a very simple vending safe with a fixed door delay.

Delay	8	7	6	5	4
0 Min	OFF	OFF	OFF	OFF	OFF
2 Min	ON	OFF	OFF	OFF	OFF
4 Min	OFF	ON	OFF	OFF	OFF
6 Min	ON	ON	OFF	OFF	OFF
8 Min	OFF	OFF	ON	OFF	OFF
10 Min	ON	OFF	ON	OFF	OFF
12 Min	OFF	ON	ON	OFF	OFF
14 Min	ON	ON	ON	OFF	OFF
16 Min	OFF	OFF	OFF	ON	OFF
18 Min	ON	OFF	OFF	ON	OFF
20 Min	OFF	ON	OFF	ON	OFF
22 Min	ON	ON	OFF	ON	OFF
24 Min	OFF	OFF	ON	ON	OFF
26 Min	ON	OFF	ON	ON	OFF
28 Min	OFF	ON	ON	ON	OFF
30 Min	ON	ON	ON	ON	OFF
32 Min	OFF	OFF	OFF	OFF	ON
34 Min	ON	OFF	OFF	OFF	ON
36 Min	OFF	ON	OFF	OFF	ON
38 Min	ON	ON	OFF	OFF	ON
40 Min	OFF	OFF	ON	OFF	ON
42 Min	ON	OFF	ON	OFF	ON
44 Min	OFF	ON	ON	OFF	ON
46 Min	ON	ON	ON	OFF	ON
48 Min	OFF	OFF	OFF	ON	ON
50 Min	ON	OFF	OFF	ON	ON
52 Min	OFF	ON	OFF	ON	ON
54 Min	ON	ON	OFF	ON	ON
56 Min	OFF	OFF	ON	ON	ON
58 Min	ON	OFF	ON	ON	ON
60 Min	OFF	ON	ON	ON	ON
62 Min	ON	ON	ON	ON	ON

Figure 6-1: D8X DIP Switch Vend Delay Setup Chart

The vend delay on a D8X is set using the DIP switch on the main vend board. Start with all DIP switches OFF, then turn on DIP switches as needed (per Figure 6-1) to set the Vend Delay. Unload Delay is fixed. To disable all delays for test purposes set Switch Segment 1 to ON. Be sure to reset Segment 1 to OFF when testing is complete.

REPORTS & RECEIPTS

The ability to print reports and receipts is key to the overall purpose of the AuditLok XLV. A variety of financial and system reports are available. A simple serial printer should be connected to the system controller. Appendix A shows a number of report and receipt examples.

FINANCIAL REPORTS

Financial reports include individual or grand Operator (X), Cash (on hand), and End Day (Z Grand) Reports.

Any operator, regardless of report permission, can view or print their own Operator Report for their shift. Operator Reports zero out when the daily net cash End Day Z Grand Report is run.

AUDIT REPORT

The Audit Report shows every event in the system during a specific time period. It tracks personnel activity, system events, and financial transactions. This sort of data is useful not only for theft detection and deterrence, but also for tracking operational trends. The audit trail on this product is approximately 20,000 lines long. Each event recorded includes the identity of the user involved, date and time, and the details of what took place.

SYSTEM REPORTS

Other system reports include an Enrolled User report and a Configuration Report. The former prints a list of enrolled users and lists their permissions while the latter displays a list of system components and their critical settings.

RECEIPTS

Receipts print automatically as the result of operator activity. For example, if you vend a tube, a vend receipt prints automatically. Other automatic receipts include load, unload, drop, and deposit.

PRINTER

Every AuditLok XLV controller unit is shipped with a serial line printer for printing receipts and reports. The printer connects to the controlling unit via an RJ-45 cable.

USERS

A user is a person with at least some access to AuditLok XLV features. A user has an identifier (key or number) and a PIN for positive identification. Users are assigned a set of permissions when enrolled (a manager of sufficient authority may edit those permissions). Up to 100 users may be enrolled. The system may require users to change their PIN after a certain number of days, and may automatically remove users from the system who don't use the system for an extended period.

PROGRAMMING

The system's CPU is pre-configured at the factory according to the customer's requirements. Virtually every facet of the system may be customized, from timelocks to names of doors, to column values. Remote units, however, are configured in the field upon installation. The system configuration may only be edited by authorized personnel. Once the initial installation configuration is completed, advanced programming is rarely required, other than enrolling and editing users.

ELECTRONICS

A central processing unit (CPU) module is at the heart of any AuditLok XLV system. The CPU is where system data is stored, and it is the device that controls and monitors all other system components. Other electronic components, such as door controllers, vending controllers, and validator controllers also have mini-processors to control their own operation and communication with the main CPU. These components maintain within them the last few audit trail lines so that, in the event of a burglary, these minor electronic components can report the last events recorded in the audit trail even when the CPU is damaged. Note, however, that in the event a system's CPU is destroyed in a burglary, it may be necessary to return electronics from a remote unit in order for the factory to extract this information.

POWER

Electronics require electricity to operate. All units use the same type power supply, and should be powered through a UPS (uninterruptible power supply). Validator units will have a second (auxiliary) power supply. The UPS and power supply components must be accessible in the event that service is required.

SYSTEM INTERCONNECTION

AuditLok XLV system components share information, much as a computer network shares information. Units are physically interconnected, again, similar to a network. This is done using standard computer network style RJ-45 cables. Up to 31 remote units may be connected to a single controller unit. In addition, up to eight EPR remote displays may be added. The maximum total data bus length may be as much as 3000 feet (1000 meters). Figure 6-2 shows an example of how a multiple unit system is interconnected.

MODEM

An external modem may be connected to the AuditLok XLV in order to access audit data, download reports, check system setup parameters, and even modify the system configuration, if needed.

ALARM

If used, a cable coming from the rear panel of the controller unit connects to the building alarm system. The cable provides a simple control signal to alert the authorities in the event that a door is opened with a control signal from the electronics (burglary), or if a user enters a duress PIN code (robbery).

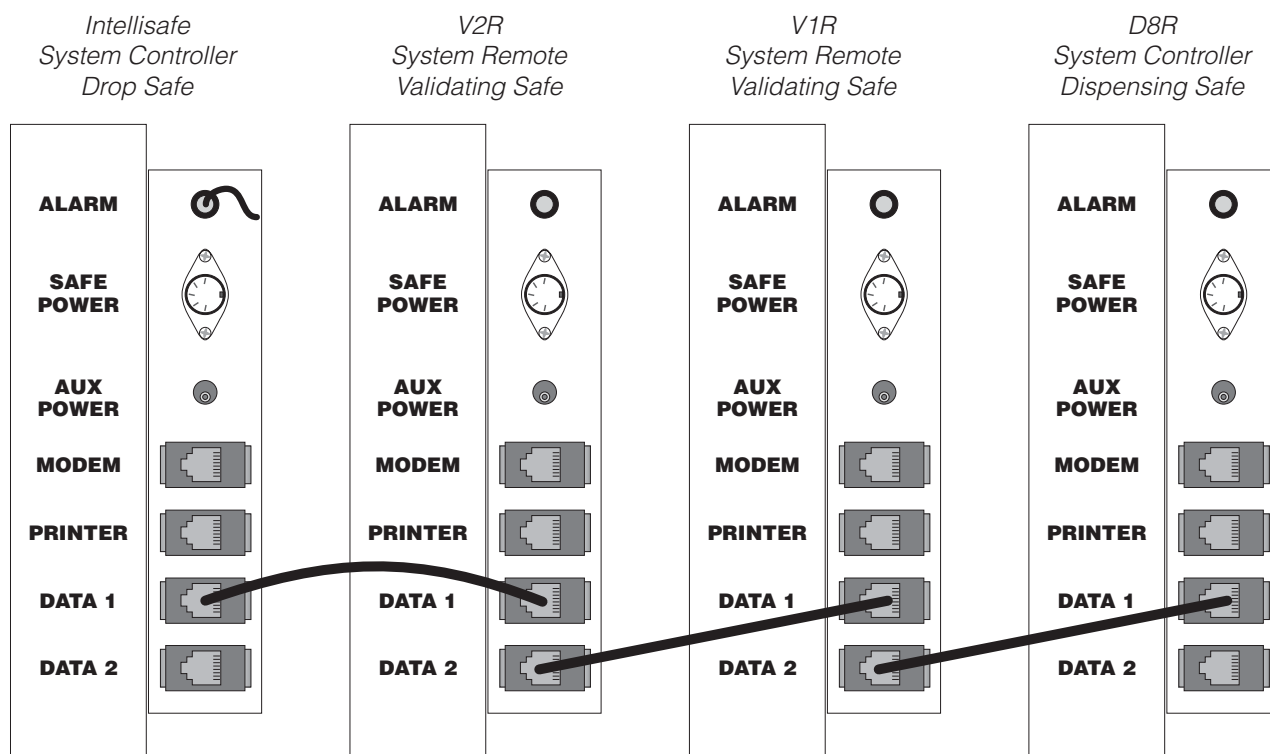


Figure 6-2: AuditLok XLV System Data Interconnection

7 TROUBLESHOOTING

ERROR

Message: Time Locked

Message: Delay In Effect

Message: User Cannot Access This Door

Message: Door Open

Message: Warning Close Door

Message: Violation Close Door

Message: Check Printer

Message: Communication Failure

EXPLANATION

The door or vend assembly you are attempting to access is unavailable due to time lock.

The vend delay is still counting down.

You do not have permission to open this door.

This message appears when you attempt to use any drop or vend procedures when a system door is open.

1. The door has been left open until the access period is exhausted. An audible beep alerts you to close the door.

2. Door sensor failure (alarming with door shut).

1. The door has been left open until the alarm time is reached. A constant audible tone alerts you to close the door.

2. The door is sensed open, but was not opened by procedure.

3. Door sensor failure (alarming with door shut).

The printer is off, out of paper, out of ribbon, or is disconnected.

Additional information on the screen will indicate what device or component is the source of trouble.

SOLUTION

Wait until the door or vend unit is out of time lock or reprogram time lock.

Wait until the vend delay has expired, then try again, or use the Buy Change feature instead of Vend.

Service Personnel: contact NKL to be enrolled with sufficient permission for the function you need to perform.

Close all doors; if necessary, for service purposes, you may temporarily hold the door plunger down while performing maintenance.

1. Close the door. If necessary, remove power while performing maintenance or trip the detent and hold in the door sensor plunger.

2. Replace the failed sensor/lock.

1. Close the door. If necessary, remove power while performing maintenance or trip the detent and hold in the door sensor plunger.

2. This condition constitutes the burglary alarm. Properly shut and lock the door before continuing maintenance.

3. Replace the failed sensor/lock.

Check the printer, its paper and ribbon, and make sure the printer is connected to the safe. Run printer self test.

Check power and communication cable connections. Contact NKL Technical Service.

ERROR	EXPLANATION	SOLUTION
Message: Bill Jam	A bill fed into a validator did not stack properly during the validator drop.	<ol style="list-style-type: none"> 1. Cycle power to the validator. 2. Open the door to the validator, remove the validator cassette, and clear the blockage.
Message: Unknown Denom	A bill was stacked in the validator's bill cassette, but the validator was unable to determine the bill denomination. This may happen if power to a critical system component or device is interrupted during a drop.	To prevent future problems, ensure that all components are powered via surge protectors and that the power source is stable. Do not attempt to cycle power while making a drop.
Message: Validator Full	The validator mechanism senses that its cassette is full.	Make a bank deposit (remove and empty the bill cassette, then replace).
Message: Warning Extended Drop In Use	The selected validator is already logged into Extended Drop mode.	If you proceed with making a drop, make sure your drop is to a validator not logged into Extended Drop. Otherwise, your drop will be credited to the user logged into Extended Drop.
Message: Column Empty	The column you are attempting to vend from has no tubes in it (according to inventory).	Load tubes. If the message is in error, unload the column before loading tubes.
Message: Tube Jam	A tube is caught in the dispensing system, preventing a vend motor from operating properly.	Open the outer door and clear the tube jam. Refer also to Section 8.
Message: Invalid PIN	The PIN entered does not match the PIN that the system expects for the identifier presented.	Reenter the PIN. If the PIN is lost, use the Edit Users procedure to set a temporary PIN.
Message: Error Not A Valid Key or User	The identifier (key or user number) presented is not enrolled, or is inactive.	If it is a key, enroll it with the desired permissions. If it is a user number, check and edit user status or enroll the user to a new user number.
Message: No Room For New User	The system limit of 100 users is exceeded.	One or more users must be deleted before anyone else may be enrolled.
Message: Security Violation Timeout	The wrong PIN has been entered five consecutive time. The system considers this a potential attack.	Wait 5 minutes for the violation to clear before attempting access again.

ERROR**EXPLANATION****SOLUTION**

Message: No Permission For This Action

You do not have sufficient permission to perform the requested action.

Contact the store supervisor regarding this user's permissions or contact NKL for access.

No Display

Loss of power to the safe (or EPR).

Check that the power supply to the safe (or EPR) is plugged in at both ends.

Door Will Not Unlock (No Error Message)

Possible internal communication problem, possible internal lock failure, possible boltwork jam or failure.

See Section 8.

Door Will Not Lock (No Error Message)

Possible blockage in door, possible lock failure, possible boltwork detent problem.

Check for blockage; see also Section 8.

8 REPAIR SERVICE

SYSTEM

The following are system level concerns. The old saying that “an ounce of prevention is worth a pound of cure” definitely applies to service of this product.

RULES OF COMMUNICATION

When installing or servicing the AuditLok XLV, proper cable connects are absolutely vital to proper system operation. Failure to connect cables correctly can result in loss of control, lockout, and in some cases will cause component failure.

Safe to Safe Connection

The data output from the controller safe is always from DATA 1, going to DATA 1 of the first remote safe. Standard CAT-5 network cable is excellent for this application. Both ends are terminated (1 to 1) with RJ45 plugs. Remote units are shipped with extension cables. Often, however, space and distance will require you to obtain or construct different cables for your application. To make RJ45 cables, obtain the length of cable needed, route the cable as needed, then terminate both ends with RJ45 plugs using an RJ45 crimping tool. Improper or reversed termination will prevent system communication.

Lock Board Reverse Cables

Regardless of the version of D8, the outer door lock is actuated from a lock board mounted on the outer door (near the lock). The cable from lock to lock board is a reverse wired (crossover) cable. The lock’s cable is always connected to J3 on the lock board. NKL uses a black cable for easy identification. Connecting anything via a one-to-one cable to the J3 port on the lock board will definitely cause lock board failure. Normal and reverse wired cables are shown in figures 8-2 and 8-3, respectively.

Lock boards mounted within cans always have the reverse wired cable connected inside the can so that no external reverse cables are required.

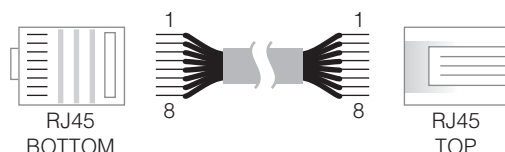


Figure 8-2: Normal RJ45 to RJ45 Cable

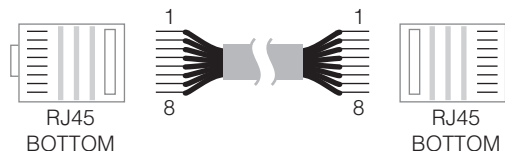


Figure 8-3: Reverse Wired RJ45 to RJ45 Lock Cable

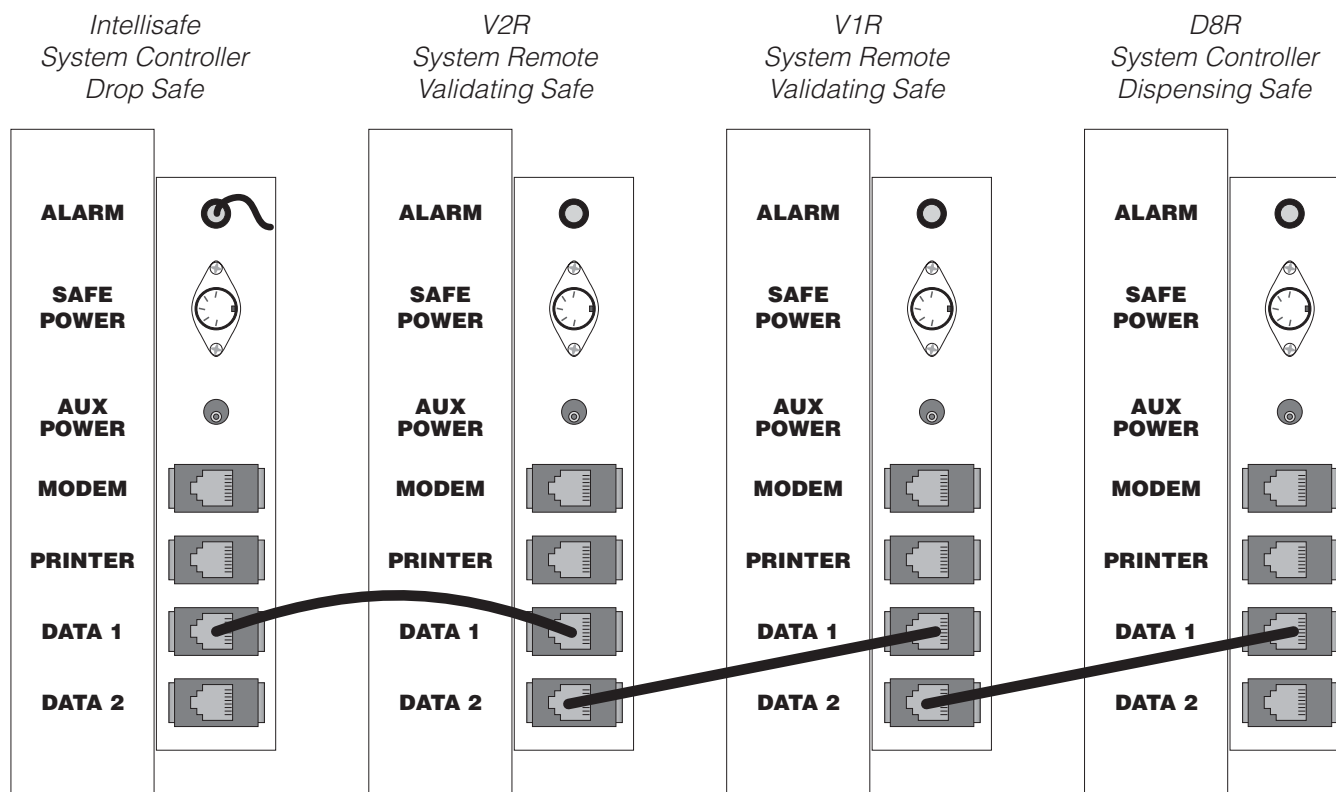


Figure 8-1: AuditLok XLV System Connections

Remote Unit Data Interfaces

In a controller safe, the CPU and Daughter boards work together and serve as the central “brain” for the entire system. That said, even within a remote unit, one circuit board must handle interfacing data between the components inside that remote safe and the controller unit.

In V1R and V2R remote units, the data connection from main harness always goes to J1 on the first UIB. J5 on the first UIB couples the data out to J2 on the second UIB (V2R) or J1 on the lock board (V1R).

On D8R remote units, the outer door lock serves as the remote unit's system interface. Data from the can connects to J1 on the outer door lock board. J5 on the outer door lock board then couples data to the main vend board at J5. If you have a D8R unit with an inner compartment, contact NKL Technical Support for wiring information.

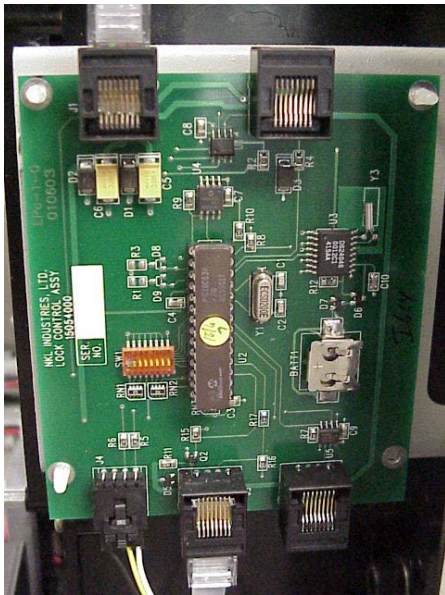


Figure 8-4: Lock Board Photo

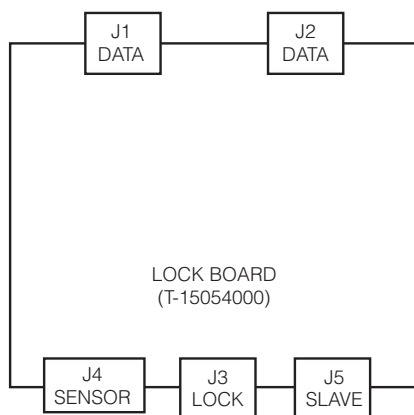


Figure 8-5: Lock Board Jack Diagram

On AXR units, the first lock board is the system interface. Data connects from that first lock board J5 out to J2 on the second lock board. Any additional lock boards are connected between J1 and J2, from one board to the next. The maximum number of doors on any AXR unit is five.

Vend Assemblies

Data connections to the vend assembly are relatively simple. J2 and J3 are used as the data and power inputs for the armor cable coming from the electronics can. J2 and J3 are interchangeable. The other communication cable, between the vend assembly and the lock board, will connect to J4, J5 or J7 depending on the model. On the D8C, always connect the lock board cable to J4. On the D8X, always connect the lock board cable to J7. On a D8R with no inner door, always connect the lock board cable to J5. On a D8R with an inner compartment connect the lock board cable to J4. This is because the inner door lock controller board handles external system communication for the D8R rather than the outer door lock board.

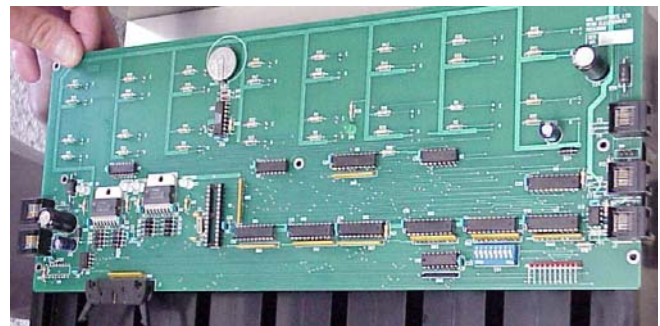


Figure 8-6: Main Vend Board Photo

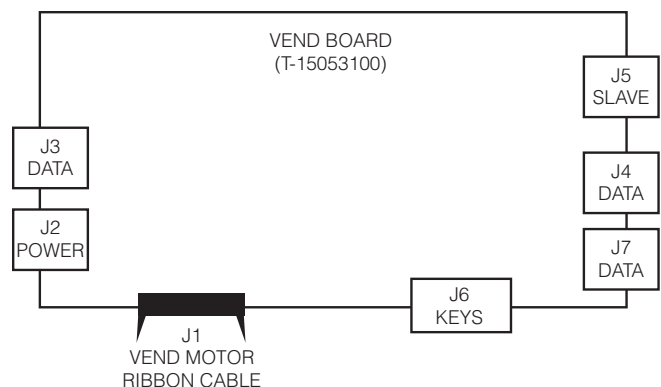


Figure 8-7: Main Vend Board Jack Diagram

Universal Interface Board (UIB)

A UIB is a necessary component because it translates data between validator native formats and the AuditLok XLV system data format. A UIB is designed to facilitate the use of different validator brands depending on customer requirements. As a communications device, a UIB is used as a system data interface on V1R and V2R units (see Remote Unit Data Interfaces section above).

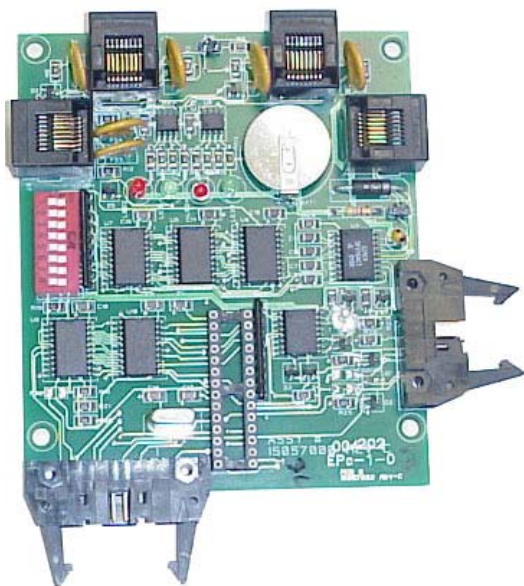


Figure 8-8: Universal Interface Board (UIB) Photo

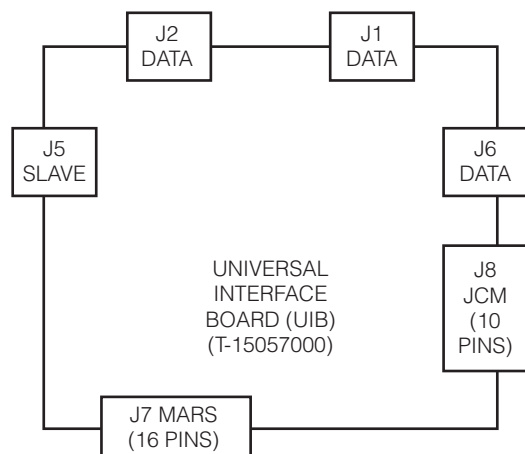


Figure 8-9: UIB Jack Diagram

Internal Electronic Assemblies

The internal electronics assembly (a.k.a. electronics can) is the junction box connecting the components within a safe body to the outside world of controller and/or remote safes. Cans in controller unit safes have the added burden of connecting to the printer, alarm system, and possibly even a modem.

The type and quantity of circuit boards mounted inside an electronics can depend on the model safe it is configured to be installed in. On some units the can has no electronics inside at all, aside from connecting cables.

USING HELP

The HELP button on the display is a powerful tool for checking the system. When you press HELP, you invoke a screen similar to the one shown below.

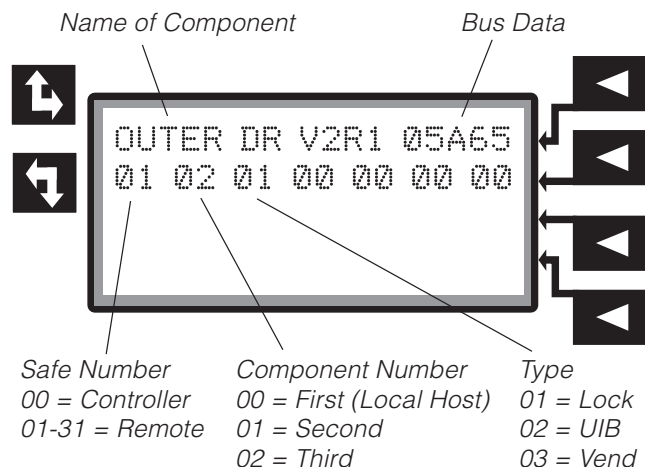


Figure 8-10: HELP Screen Example

The HELP screen shows what components that the system CPU has in its inventory.

The top line consists of two parts. The left side indicates the name of the component you are checking. If the component is not named, the component's serial number will be displayed. To the right, up to five characters will display data flow information. Components on the controlling safe will show active data flow while remote unit components will appear static.

The second line identifies the component by location, specifically by safe (first number), component bus location (second number), and type (third number). In the example above, the component shown is actually a lock board on the first remote safe, a V2R. Other numbers on this second line and any data appearing below the second line may be ignored.

If one component in a unit shows a data value of 00000, that component is not communicating. If all components in a safe return data value 00000, that entire unit is probably offline. There is like to be either a data bus problem, or loss of power to that unit.

ERROR MESSAGES

Some error messages indicate user error and others indicate that there is actually a mechanical or electrical problem with the product. For more information about error messages, refer to Section 7.

ELECTRONICS

Each model Autobank or Intellisafe has its own electronics assembly, also called a "can." The contents of a can determine the model safe it is used in.



Figure 8-11: Can Connections (D8C Shown)

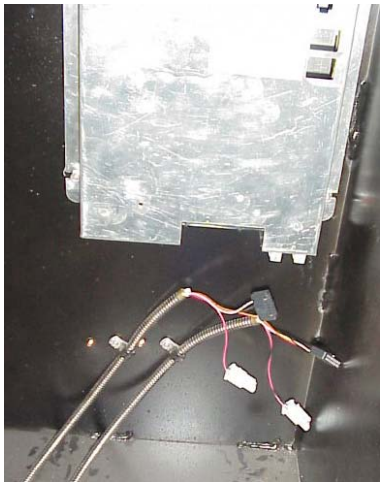


Figure 8-12: Validator Cables to Lower End of Can (shown before being connected)

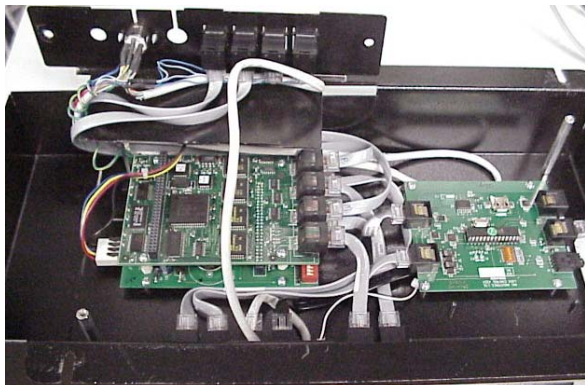


Figure 8-13: Can Interior (D8C Shown)

CONTROLLER UNITS

Any controller can will contain CPU and Daughter Boards and in most cases additional boards. Wiring diagrams for each type of can are illustrated in Section 9.

Can Removal

Before physically removing the can from a controller unit, remove all remote units from the system via Remove Devices program procedure (Section 5), if possible. If the remote units are not first removed, a reset override must be done to clear the remote units for adding back to new controller electronics.

1. Using the program procedure in Section 5, remove all remote units from the system (if possible).
2. Mark each cable connection to the rear of the safe and disconnect each cable from the rear panel.
3. Mark each cable connection to the can on the interior of the safe, then disconnect each cable.
4. Remove the capture nuts holding the can in place and remove the can.

Can Replacement

Where can removal is mostly a physical operation, installing a replacement can involves more system reprogramming.

1. On D8C units, replace Main Vend and Outer Door Lock Controller boards (see procedures below).
2. Place the new electronics can in position on the interior rear wall of the safe.
3. Replace the can's capture nuts (removed above) in order to anchor the can in place.
4. Reconnect interior cables. Use care to ensure that all cables are connected to the correct locations.
5. Reconnect exterior cables.
6. If remote units were not removed (per program procedure, Section 5), contact NKL Technical Support to perform the system remote reset override.
7. Add remote units to the system.
8. Program controller and remote units as needed.
9. Use the Config Report to verify system settings.

D8C ELECTRONICS

Unlike other units, not all intelligent electronics are located inside the can. On D8C units, the Main Vend and Outer Door Controller boards must be replaced as a set with the can. Follow can removal/replacement procedures (above), plus the following main vend and outer door lock board removal and replacement procedures.

Main Vend Board

1. Remove can following procedures above.
2. Mark each cable connection to the main vend board, then disconnect each.
3. Remove the main vend board by removing capture screws.
4. Install new main vend board from matched set by reinstalling capture screws.
5. Reconnect all cables.

Outer Door Lock Controller Board

1. Mark each cable connection to the outer door lock controller board, then disconnect each.
2. Remove the outer door lock controller board by removing capture screws.
3. Install new outer door lock controller board from matched set by reinstalling capture screws.
4. Reconnect all cables.
5. Replace can following procedures above.

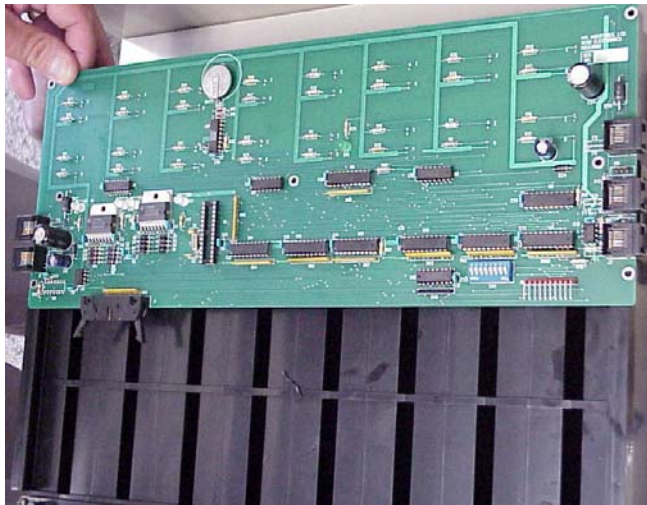


Figure 8-14: Install/Remove Main Vend Board

REMOTE UNITS

Remote unit cans will not contain CPU or Daughter boards. D8R units have no boards inside the can. AXR, V1R and V2R cans, however, contain all the main circuit boards used in the unit.

Remote Unit Reset

Remote units must be “locked down” to the controller unit. The lock down fixes the remote unit to a specific controller. The remote unit will not respond to any other controller unit until it is released. A remote unit may be released from its controller by using the Remove Devices procedure or by performing a system remote unit reset override.

1. If the remote unit is connected to its original controller and is part of that controller's inventory, perform the Remove Devices procedure to release the remote unit from its locked down condition.
2. Make sure a good data connection exists between the controller and remote unit(s) being reset.
3. Contact NKL Technical Support (800-452-4655 or 812-948-8400) for override instructions.

Can Removal

When the can from a remote unit (AXR/V1R/V2R) is removed, you must also remove the remote unit from the system controller's inventory using the Remove Devices procedure. This also applies to D8R units with an inner compartment. Standard D8R units do have inner doors, hence no electronics inside the can to worry about.

1. Using the Remove Devices program procedure (Section 5), remove the remote unit from the system controller.
2. Mark each cable connection to the rear of the safe and disconnect each cable from the rear panel.
3. Mark each cable connection to the can on the interior of the safe, then disconnect each cable.
4. Remove the capture nuts holding the can in place and remove the can.

Can Replacement

Can replacement in V1R, V2R, and AXR units involves some system programming.

1. Place the new electronics can in position on the interior rear wall of the safe.
2. Replace the can's capture nuts (removed above) in order to anchor the can in place.
3. Reconnect interior cables. Use care to ensure that all cables are connected to the correct locations.
4. Reconnect exterior cables.
5. Add the remote unit to the system using the Add Devices procedure (Section 5).

D8R Electronics

Unlike other remote units, intelligent electronics are located outside the can on D8R units. Main Vend and Outer Door Controller boards must be replaced as a set.

Main Vend Board

1. Using the Remove Devices program procedure (Section 5), remove the remote unit from the system controller.
2. Mark each cable connection to the main vend board, then disconnect each.
3. Remove the main vend board by removing capture screws.
4. Install new main vend board from matched set by reinstalling capture screws.
5. Reconnect all cables.

Outer Door Lock Controller Board

1. Mark each cable connection to the outer door lock controller board, then disconnect each.
2. Remove the outer door lock controller board by removing capture screws.
3. Install new outer door lock controller board from matched set by reinstalling capture screws.
4. Reconnect all cables.
5. Add the "new" remote unit to the controller inventory using the Add Devices procedure (Section 5).

D8X ELECTRONICS

Main Vend and Outer Door Controller boards must be replaced as a set. Other electronic components may be replaced independently.

Main Vend Board

1. Mark each cable connection to the main vend board, then disconnect each.
2. Remove the main vend board by removing capture screws.
3. Install new main vend board from matched set by reinstalling capture screws.
4. Reconnect all cables.

Outer Door Lock Controller Board

1. Mark each cable connection to the outer door lock controller board, then disconnect each.
2. Remove the outer door lock controller board by removing capture screws.
3. Install new outer door lock controller board from matched set by reinstalling capture screws.
4. Reconnect all cables.

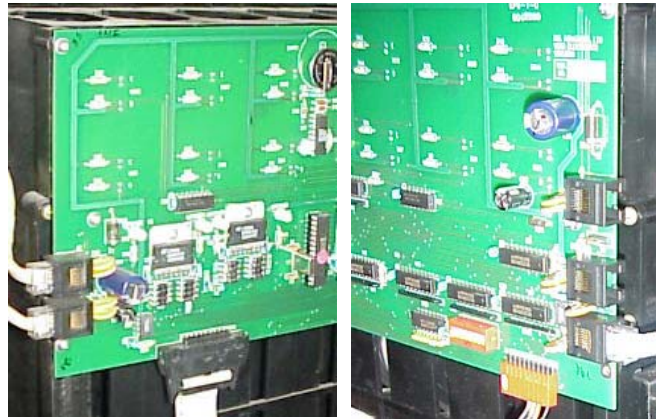


Figure 8-15: Main Vend Board Cable Configuration
(Typical D8X Shown)

REPLACING INDIVIDUAL CIRCUIT BOARDS

All of the major circuit boards in a unit (whether a controller or a remote unit) must be matched. This is a software process performed at the factory. This is why you cannot replace individual intelligent electronic modules. It is permissible, however, to replace validators, locks, D8 motor controller boards, or D8 output sensors without replacing other electronics because these parts do not hold system level intelligence.



Figure 8-16: Inner Door Lock



Figure 8-17: Outer Door Lock (V1)



Figure 8-18: Outer Door Lock (D8)

LOCK/DOOR

A standard LaGard swing bolt lock is used on outer doors. Inner doors, however, use a standard LaGard spring (knob) lock. In either case, external door sensors augment internal sensors. Each lock has its own lock controller board. The function of the lock controller board is to serve as an interface between the lock itself and the system controller. Locks do not have internal electronics.

Caution: On “R” Units with Medeco keyswitches, you must have the Medeco key in order to operate the lock on the door regardless of permission level or factory override. It is the responsibility of the business management to provide this key.

Won't Lock

If a lock will not lock, the problem may be the lock or the lock controller board. To test this, remove power from the safe and check if the safe continues to remain unlocked. If so, replace the lock. If the safe becomes locked upon removing power, replace the electronics.

Won't UNLOCK

If a safe door will not unlock following the normal door procedures, any of several things may be wrong: lock failure, loose/broken lock cable, loss of power to the safe, loss of communication to the safe (“R” Units), failed fire button/switch or associated cable (“R” Units), failed lock electronics, or improper program configuration. Remember, before you can attempt to open the door of an “R” Unit with a Medeco keyswitch, you must have the key in your possession.

NO DEPOSIT RECEIPT

This symptom is usually accompanied by no door access time count, though the latter is rarely noticed by users. Check continuity of the door sensor. For external door sensors, the problem is usually solved by adjusting the position of the sensor. If adjustment does not solve the problem, replace the plunger sensor. If the problem is the lock's internal sensor, replace the lock.

LOCK AND DOOR SENSORS

Locks have a built in sensor to detect lock status. Both interior and exterior safe doors use plunger sensors in addition to internal lock sensors. If either sensor indicates the door has come open when the lock was not fired by its own electronics, the burglary alarm signal is actuated.

Sensor failure may be indicated by lack of deposit receipts, audible alarm, or simply failing to respond properly during door access procedure. In some cases, an inner door may not be accessible when the outer door cannot be sensed opening. Note that if an inner door cannot be opened due to an outer door sensor problem, it may be necessary to reprogram the system such that the inner door operates like an outer door so that it can be opened independently.

Lock Sensor

Locks have an internal sensor to detect lock status. This switch may be tested by measuring continuity between pins 3 and 2 (normally open) or between pins 3 and 4 (normally closed) at the RJ45 jack on the lock. For convenience, this measurement may be taken at the end of the cable (remember to reverse the pinout when checking a reversed cable).

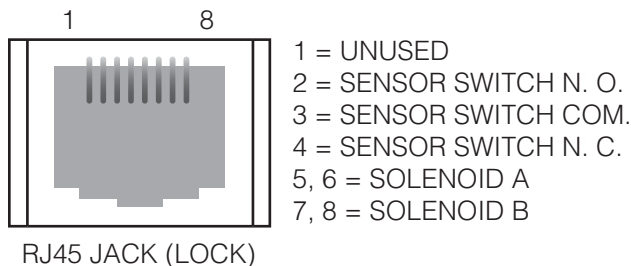


Figure 8-19: Outer Door Lock RJ45 Jack

Door Sensor

A simple spring loaded plunger sensor is used to detect physical door status. While the lock's sensor can determine whether a door is locked or unlocked, it is the plunger sensor that detects whether the door is actually open or not. The plunger switch is normally open. When the plunger switch is pressed (door shut), the plunger switch closes.

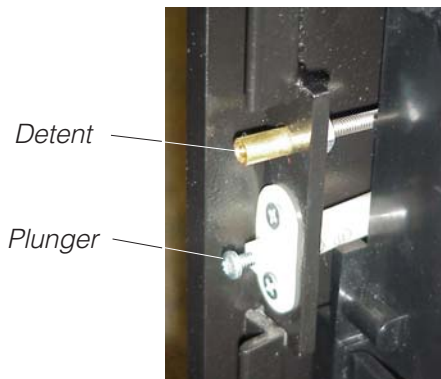


Figure 8-20: Door Sensor and Adjustable Detent

LOCK REPLACEMENT

When a lock fails, the lock can be replaced independent of electronics. Always test the new lock before closing the door.

1. Remove power from the safe.
2. Disconnect the RJ45 cable input to the lock.
3. Remove the mounting screws and remove the lock.
4. Install replacement lock.
5. Reconnect the RJ45 cable input to the lock.
6. Restore power to the safe.
7. Test operation of the lock thoroughly using the door opening procedures before closing the door.

LOCK OVERRIDE

In addition to the normal door procedures, it is also possible to open a safe door using an override. If other procedures fail, always attempt to override the door before drilling it open. To perform a door override, contact NKL Technical Support (800-452-4655/812-948-8400). Remember, if it is an "R" unit with a Medeco keyswitch, you still must have the key (even with an override).

D8 Outer Door Lock Board

The outer door lock controller board is mounted on the outer door of all D8 units. If this board is replaced, the main vend board and main electronics can (D8C only) must be replaced with it. Refer to the Electronics section.

MECHANICAL PROBLEMS

Door blockage, loose or broken linkage, or some other mechanical problem can prevent a door from opening or shutting correctly. Always perform a complete visual inspection of all mechanical parts when servicing a safe door. For complete boltwork and mechanical parts information refer to Sections 10 and 11.

D8X OUTER DOOR

The D8X outer door operates differently than other safes. Since there is no CPU, the door lock is actuated using Medeco keyswitches. If the D8X MGR key is not available, the outer door cannot be opened, even if the ACO key is available.

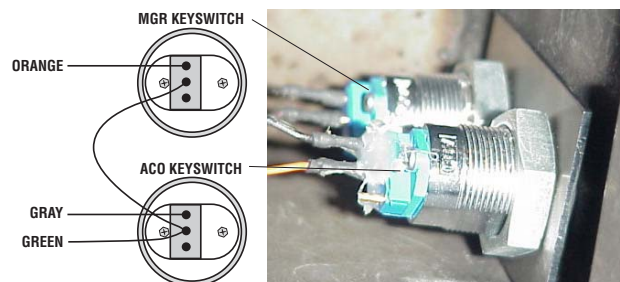


Figure 8-21: D8X MGR & ACO Keyswitch Wiring

VENDING

The vending features on any version of D8 encompass a number of electronic and mechanical parts as well as system programming.

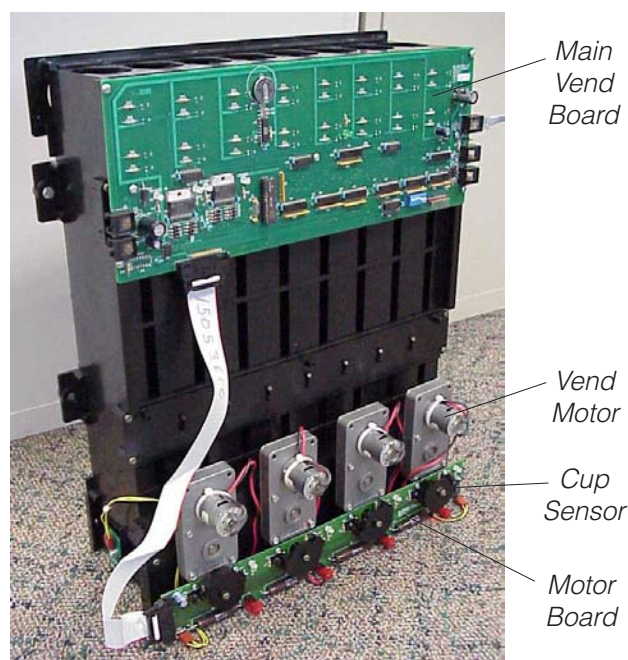


Figure 8-22: D8 Vending Assembly (Complete)

TUBE LOCK

The tube lock is metal plate that is designed to prevent unauthorized tube loading. When the plate is in the locked position, the tube openings are partially blocked, leaving only enough room to insert a dip stick. The tube lock plate is moved out of the way via linkage to a mechanical Medeco keyswitch. If the tube lock does not move smoothly when operating the keyswitch, adjust the mechanical linkage as needed.

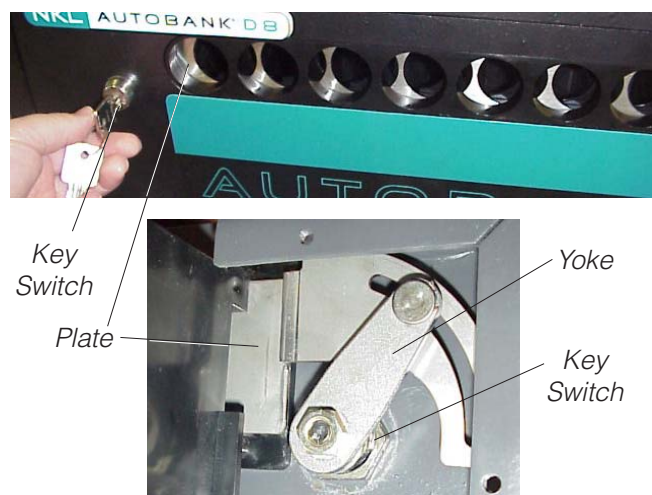


Figure 8-23: Tube Lock Hardware
(Exterior View Above, Interior View Below)

TUBE SENSORS

Tubes are tracked as they enter the vend assembly and as they are vended out. Optical sensors are used for this counting.

Input Sensors

Because there are no LED indicators for the sensors, the only practical method of testing the optic tube input sensors is to perform the load procedure. The most common problem is over sensitivity to light. The most common symptom is counting extra tubes when the safe is loaded. This happens primarily in locations where the front of the safe is exposed to direct sunlight. The solution is to move the safe to a location exposed to moderate indirect lighting or to position your body in front of the safe so that you block the direct light while loading.

If a column will not count tubes, check the cash report. The safe will not count tubes being loaded if it already thinks it has 10 tubes in it. If the column does not show 10 tubes and will not count tubes as they are loaded, verify programming and verify that the load procedure (Section 4) is being followed correctly. If no programming or procedural problems are found, replace the Main Vend Board.

Output Sensors

Failure of an output sensor (transmitter or receiver module) will be indicated by inability to perform an unload or the term "UNVERIFIED" will print on a vend receipt. Physical blockage interrupting the output sensory beam will cause the same symptoms. Check the output path for blockage before replacing transmitter and receiver modules. If no blockage is found, replace the transmitter and receiver modules. These modules are located at the bottom of the vend assembly, mounted on the sides of the assembly.

Cup Sensors

Optic sensors on the motor board track cup movement to ensure proper operation. The cup rotor shaft extends through the motor board. The motor drives the cup rotor directly. A rotor cap, installed over the shaft after the motor board is installed, passes through the optic cup sensors to track cup movement. The cup sensors are also used to identify a tube jam. If a tube jam is falsely indicated, the rotor cap or optic sensor is likely faulty.

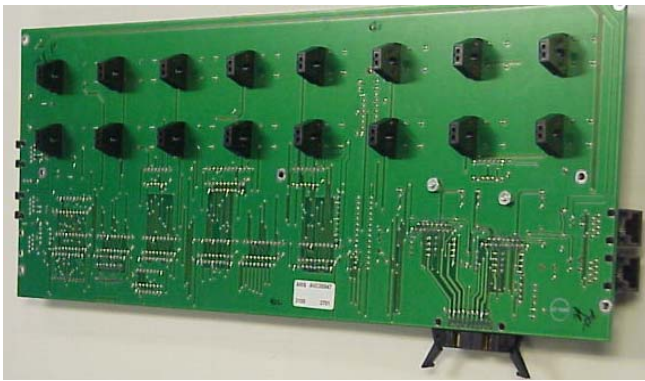


Figure 8-24: Optical Input Sensors
(Back of Main Vend Board, Faces Vend Plastics)

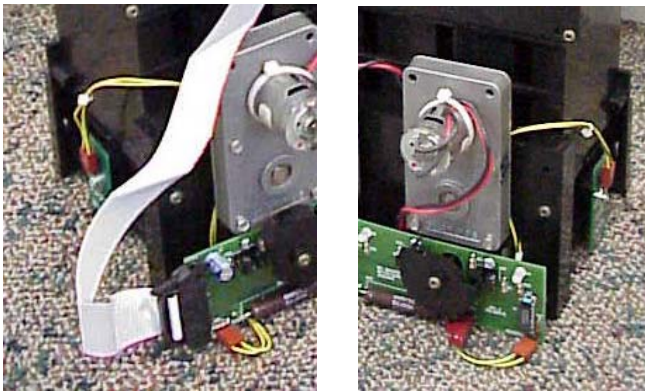


Figure 8-25: Tube Output Sensors
(Transmitter: Left, Receiver: Right)



Figure 8-26: Tube Output Sensor Module (Transmitter)

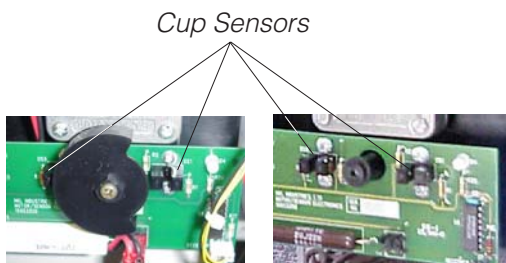


Figure 8-27: Cup Sensors (On Motor Board)

JAMMED TUBES

When you tell a D8 to vend, the main vend board sends control instructions to the motor board to operate the motor associated with the chosen column. Optic cup sensors (on the motor board) provide data back to the main vend board so that motor location is accurately tracked and controlled. If a tube jams in a column (or the cup is otherwise blocked from proper movement by debris or other mechanical problem), the cup will not move properly. Data from the cup sensors will then tell the system that the cup is not responding and a Tube Jam error message will be displayed.

To correct a tube jam, remove the applicable vend motor to free the cup, then manually clear the tube jam from the bottom of the assembly (through the opening in the front of the door) as follows:

1. Remove the mounting screws from the motor governing the affected column.
2. Gently lift off and set aside the motor for the affected column.
3. When the motor is removed the cup shaft should freely rotate.
4. Clear the blockage.
5. Check that the cup is free to rotate. Inspect and clean of any debris.
6. Return the cup to its original position and reinstall the motor.
7. Upon power-up the motors should cycle and all cups should settle at their proper positions.

Cup Properly
Positioned

Cup Free to Move
(Motor Removed)

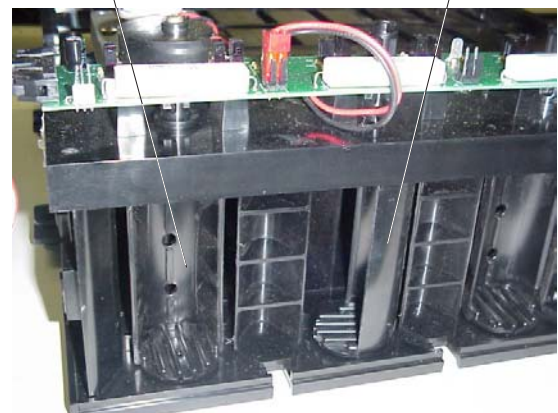


Figure 8-28: Cups

VENDING ASSEMBLY

The vending assembly is made up of the dispensing plastics, motors, main vend and motor circuit boards, and output sensor modules. If the main vend board is replaced, the outer door lock board and electronics can (D8C) must also be replaced. Other components of the vending assembly do not have this requirement.

Removing Vend Assembly

1. Mark all cable connectors to/from the vend assembly (at main vend board).
2. Disconnect RJ45 cables to/from the main vend board. On the D8X only, disconnect the keyswitch harness.
3. Remove the vend assembly by removing the four mounting bolts at the sides of the assembly.

Replacing Main Vend Board

Refer to the D8 Electronics subsection, earlier in this section of this manual.

Replacing Motors

1. Remove the vend assembly cover.
2. Remove the four mounting screws on the motor being replaced.
3. Disconnect the motor wires from the motor board.
4. Remove the defective motor.
5. Place the new motor in position and check that the motor teeth properly engage the cup rotor teeth.
6. Connect the new motor's cable to the motor board as the old motor had been connected.
7. Reinstall the motor screws.
8. Test the motor by vending from both of the motor's columns.
9. Reinstall the vend assembly cover.

Replacing Vend Motor Board

1. Disconnect the motor wires from each motor.
2. Disconnect the output sensor wires.
3. Disconnect the ribbon cable to the main vend board.
4. Remove the mounting screws from the motor board.
5. Remove the defective motor board.
6. Place the new motor board in position.
7. Install the motor board mounting screws.
8. Reconnect ribbon cable, output sensor cables, and each of the motor cables.
9. Test the motor board by vending from each column.

Replacing Output Sensors

1. Disconnect the defective output sensor module.
2. Remove mounting screws.
3. Remove the defective output sensor module.
4. Place the new output sensor module in position, then install the mounting screws and connect the sensor wires to the motor board.

Installing Vend Assembly

1. Check that all electrical parts of the vend assembly are properly mounted on the vend assembly before mounting the vend assembly onto the safe door.
2. Position the vend assembly and install the mounting screws.
3. Reconnect all cables to their proper jacks.
4. Upon power-up the motors should cycle and all cups should settle at their proper positions.

VENDING SYSTEM TOTALS

Vending system totals depend on following procedure as well as sensory function. If the tube count is wrong in a column, the solution is to unload and reload the column. The problem is typically operator error involving the load procedure. If the tube count is high, check for high ambient light at the tube openings in the front of the safe when loading tubes. Remember that store personnel often load the safe at different hours than your service, so be aware that lighting will vary with the hour of day.

MECHANICAL PROBLEMS

Due to the number of moving parts and tight mechanical tolerances in the vending assembly plastics, it is critical that they be carefully and precisely assembled and mounted. If the vending assembly plastics appear to be mechanically defective, the solution is to replace the vending assembly plastic hardware.

VALIDATORS

A validator is a unit that accepts bill currency, counts it, and stores it. Optic readers check for currency value and authenticity. The advantage of a bill acceptor is neat storage of large quantities of money. The money is stored in a cassette that is attached to the validator body.

TYPES OF VALIDATORS

MARS and JCM are the two types of bill validators that may be used on V1/V2 safes. Mechanically, the two styles are very different. To the end user, however, there is only one major difference: the JCM may be configured for international currencies. From a service perspective, validators are treated as complete parts. Breaking down and repairing validators, regardless of failure mode, is done only at the factory.



Figure 8-29: MARS Validator (Left) and JCM Validator (Right)

VALIDATOR GENERAL THEORY OF OPERATION

Validators draw bills in through the bezel, pull the bills through an optical reader, analyze the bill for denomination and authenticity, then send the bill through a stacking mechanism where it is transferred to the storage cassette. As the bill data is collected, it is reported to its UIB. The UIB, in turn, communicates the financial information to the controller for accounting purposes.

UIB's are used for two primary reasons. First, the UIB will allow a choice of validator brands with no change to other system electronics or programming. Secondly, a failure of the validator will not cause a failure to the main system communications.

Both JCM and MARS validators require an external auxiliary power supply for operation. MARS validators use a 24 V_{AC} supply while the JCM validator requires a 12 V_{DC} supply.

MARS VALIDATORS

MARS 3800 (non-locking) or 3900 (locking) Series validators may be used. The standard, however, is the locking style with a 1200 bill cassette. MARS validators need to be tilted forward to allow access to the cassette. Cassettes must be fully and properly seated with the cassette lock in the engaged position before the validator will accept bills.

MARS Setup

DIP switches on the validator are used to configure it for operation. For normal operation, all DIP switches must be in the OFF position. Note that any changes to DIP switch settings are not effective until the validator is powered up from a no-power condition. Data from the electronics can be connected to the 16 pin port on the validator electronics console. Power connects to a 9-pin Molex plug at the validator. Never connect or disconnect validator data cables unless power is removed to both the validator (aux power) and the main safe electronics (safe power).

MARS Self-Test

Perform the MARS self-test if the validator is suspected of some sort of failure. If the unit pulls in a bill and stacks it properly in test mode, it proves the validator itself is okay. If a validator fails its self-test, it should be replaced.

1. Remove power to the validator and safe.
2. Disconnect the data cable to the UIB.
3. Remove the cassette from validator.
4. Set Switch 8 on SW1 to ON and all other DIP switches to OFF.
5. Apply power to the validator.
6. Check that the validator stacks. Failure to stack indicates a power problem. If the validator does not stack, check the power supply going into the validator for proper voltage. If the power supply is found to be okay, replace the validator.
7. Insert a bill to check validator operation. The bill should be pulled through and ejected by the stacking plate. If the validator does not pull the bills through properly, inspect for debris (such as a torn bill, paper clip, tape, etc.). Clean the validator using compressed air, then try again. If the validator still does not accept bills in test mode, replace the validator.
8. When a validator accepts bills in test mode, but not in normal operation, the problem may be cassette mounting, the data cable, or the UIB. Each should be checked.

MARS Bezel Indicator Diagnostics

In normal operation, green indicators on the bezel will light to indicate that the validator is ready to accept bills. If the bezel lights do not come on when making a drop, there is a problem with the validator, UIB, data bus, or system programming. To help determine the most likely cause of trouble, observe the validator bezel indicators for activity.

Flash Code: Interpretation:

- No Lights No power or no data signal from safe electronics. Check validator power and cable continuity. Verify validator operation in test mode. Replace the safe's main electronics can if no other problems are found.
- Steady On Ready to accept bills.
- Rapid Blinking Cassette full. Empty cassette. If the cassette is already empty, check cassette mounting and/or replace cassette.
- 3 Blinks Coupon mode. Reset DIP switches and power cycle.
- 4 Blinks Bill jam. Clear jam and clean bill path with dry compressed air.
- 5 Blinks Lockable cassette removed. Install, engage, or reseat cassette as needed.
- 6 Blinks Tamper detected. If the condition does not clear within 15 minutes, replace the validator.
- 7 Blinks Stacker blockage. Remove the cassette and clear the stacker of debris. If the problem persists, replace the validator.
- 8 Blinks Bill taken but no credit given. This may show up in a report as an unknown denomination. It is usually the result of a temporary power loss while making a drop.
- 9 or 10 Blinks The validator needs to be cleaned with dry compressed air.

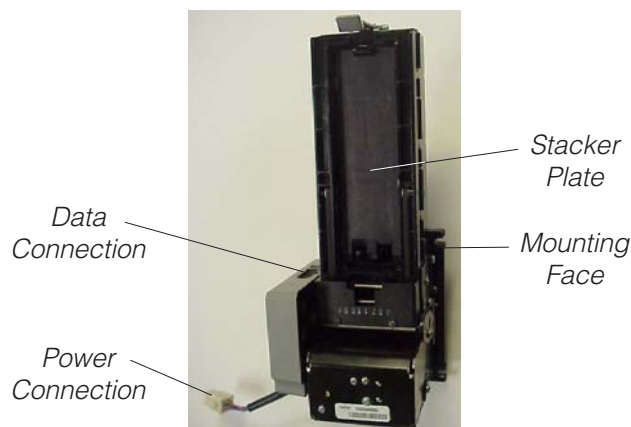


Figure 8-30: MARS Validator

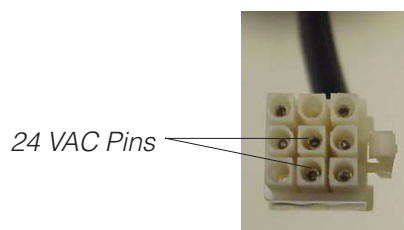


Figure 8-31: 24 VAC Plug



Figure 8-32: DIP Switches

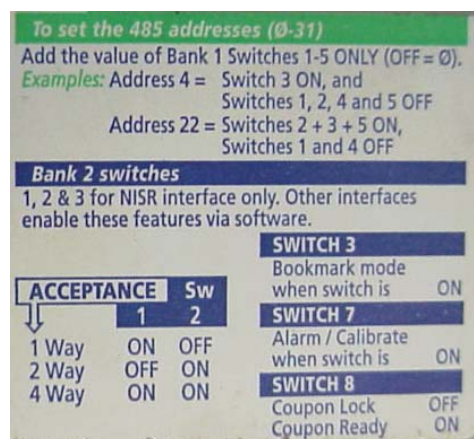


Figure 8-33: DIP Switch Setup Instructions



Figure 8-34: Locking Cassette



Figure 8-35: Non-Locking Cassette

MARS Validator Cleaning

Validators should be sprayed with dry compressed air only. Never use alcohol pads or similar substances as they alter the surface of the validator reader heads. Dry compressed air effectively pushes out dirt and dust without damaging the optic heads. For complete cleaning remove the cassette and blow out the validator in both directions through the bill path.

MARS Bill Jam

The error message "BILL JAMMED" may appear on the display, or you may determine there is a bill jam from visual inspection.

1. Cycle validator power to force the stacking mechanism to cycle. This often forces a bill to pull through the stacker and elevator. Repeat once or twice, if needed.
2. If the bill (or foreign object such as tape or paper clip) remains stuck, it will be necessary to remove the validator cassette, dismount the validator, and remove the electronics case to access the bill path. If the obstruction cannot be found or cleared, replace the validator.
3. NEVER dig inside the bill path with tools. This will destroy the sensor heads.
4. Once the bill jam is cleared, cycle power to the safe to clear the error message.

MARS Validator Replacement

A validator may be replaced without replacing other electronics.

1. Ensure that power is off to both the safe and the validator before starting any component replacement.
2. Disconnect the data/power cable from the data and power connectors at the validator.
3. Remove the validator from its bracket assembly by removing the four mounting nuts from behind the validator face. Note: Depending on the location where you are working, it may be easier to dismount the entire bracket assembly before removing the validator from its bracket, although this is optional.
4. Set all DIP switches on the new validator to OFF.
5. Install the new validator onto the validator bracket and, if necessary, replace the entire assembly.
6. Connect power and data cables.
7. Restore power to the safe and validator.
8. Check that the validator stacks. Test by making a drop.

JCM VALIDATORS

The JCM WBA1000 validators may be factory programmed to accept a variety of international currencies. Aside from supporting international currency and the obvious physical differences in construction, to the user JCM validators operate in a manner similar to the MARS units. From a service perspective, the following describes various procedures involving JCM validators.

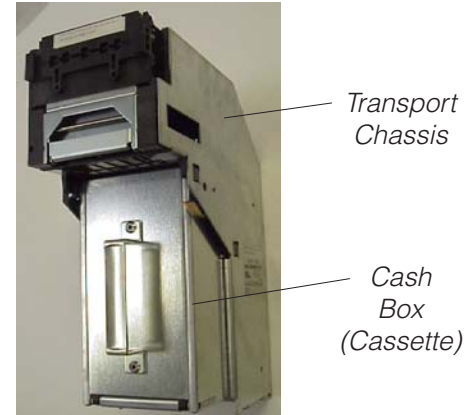


Figure 8-36: JCM Validator

JCM Setup

DIP switches on the validator are used to configure it for operation. For normal operation, all DIP switches must be in the OFF position. Note that any changes to DIP switch settings are not effective until the validator is powered up from a no-power condition. Data from the electronics can is connected to the 10 pin port on the validator electronics can. Power from the can goes into the validator at the same validator port.

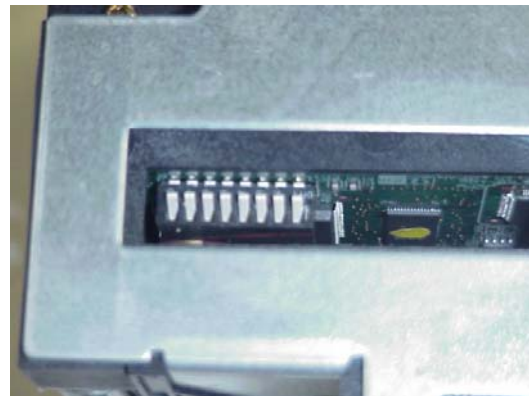


Figure 8-37: JCM Setup DIP Switches

JCM Self-Test

The self-tests for the JCM validator require special conditions that cannot easily be created in most field environments. If the JCM validator is suspect of failure, replace the validator.

JCM Bezel Indicator Diagnostics

In normal operation, green indicators on the bezel will light to indicate that the validator is ready to accept bills. If the bezel lights do not come on when making a drop, there is a problem with the validator, UIB, data bus, or system programming. Check power and connections before replacing the validator. If the replacement validator does not respond, replace the safe's electronics can.

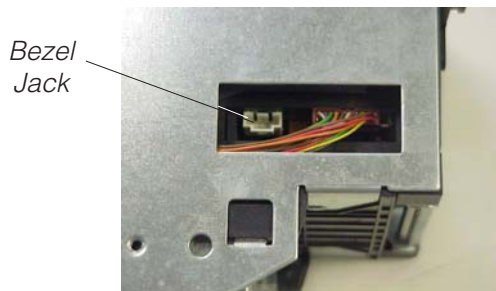


Figure 8-38: JCM Bezel Connector

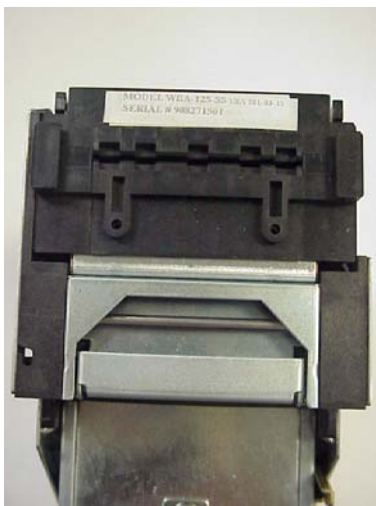


Figure 8-39: Transport Head View (Bezel Removed)



Figure 8-40: Data/Power Connector

JCM Validator Cleaning

Validators should be sprayed with dry compressed air only. Never use alcohol pads or similar substances as they alter the surface of the validator reader heads. Dry compressed air effectively pushes out dirt and dust without damaging the optic heads. For complete cleaning remove the cassette and blow out the validator in both directions through the bill path.

JCM Bill Jam

The error message "BILL JAMMED" may appear on the display, or you may determine there is a bill jam from visual inspection.

1. Cycle validator power to force the stacking mechanism to cycle. This often forces a bill to pull through the stacker and elevator. Repeat once or twice.
2. To clear a bill jam, open the safe door and tilt the validator forward to access the top and back sections of the transport system.
3. Press the front transport latches to release the front transport. Swing this transport up to access the front section of the transport mechanism and remove any debris found. Close the front transport when done.
4. Pull the release for the back transport section and pull it open. Remove any debris found. Close the transport when done.
5. If the validator continues to reject bills or report a bill jam, remove and empty the bill cassette.
6. NEVER dig inside the bill path with tools. This will destroy the sensor heads.
7. Once the bill jam is cleared, cycle power to the safe to clear the error message.

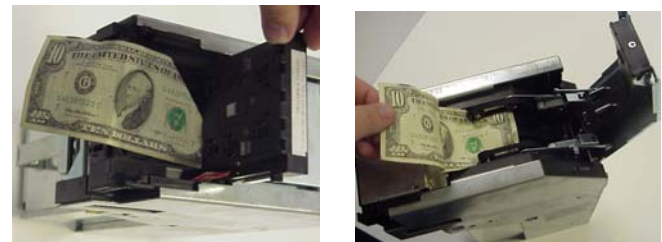


Figure 8-41: Clearing JCM Bill Jams



Figure 8-42: Removing and Opening JCM Bill Box

JCM Validator Replacement

A validator may be replaced without replacing other electronics.

1. Ensure that power is off to both the safe and the validator before starting any component replacement.
2. Disconnect the data/power cable from the validator.
3. Dismount the entire bracket assembly by removing the shoulder bolts from the bracket hinge, then lift the entire assembly out.
4. Remove the validator from its brackets.
5. Set all DIP switches on the new validator to OFF.
6. Install the brackets on the new validator.
7. Install the complete assembly, including bushings and shoulder bolts.
8. Connect power and data cables.
9. Restore power to the safe and validator.
10. Check that the validator stacks. Test by making a drop.

BILL REJECTION

If bills are drawn in partially, then rejected, that means that as far as the validator is concerned, the bill is not good. If it is one particular bill, that bill is probably either counterfeit or damaged. If the validator has problems accepting all or several bills, the optical reader is probably dirty or scratched. Try cleaning with dry compressed air only. Avoid using alcohol pads or other liquid cleaners as they may damage the optic heads or cause the heads to draw dirt. Never insert tools or other objects into the mouth of a validator to attempt to reclaim torn bills or debris. Scratches on the surface of the optic readers will prevent the validators from properly reading bills. If cleaning with compressed air does not solve the problem, replace the validator.

UNKNOWN DENOMINATION ERROR

The error message "UNKNOWN DENOM" may appear on the display or on a drop receipt. This message means the validator has accepted a bill but has not counted it. The only known cause is a power interruption during validation. This is most frequently due to intentionally cycling power as a corrective action for a jammed bill or similar maintenance.

POWER

One of the most common problems with electronic products is partial or complete loss of power. External power supplies are used with NKL safes so that a safe does not need to be drilled open to service the more common types of power supply failures.

MAIN POWER SUPPLY

The three-level main power supply ($\pm 12 V_{DC}$ and $+5 V_{DC}$) may easily be checked with a multimeter. Refer to Figure 8-43 below for measurements. To prevent power supply failure due to surges or spikes, always use uninterruptible power supplies with your safes.

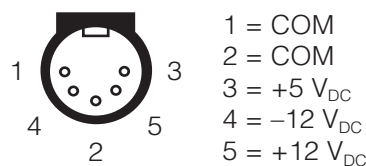


Figure 8-43: 5-PIN Safe Power Supply DIN Plug

Auxiliary Power

Validators and EPRs use the Aux power input. The voltage required depends on the nature of the load. An EPR uses a $9 V_{DC}$ supply while MARS validators use $24 V_{AC}$ and JCM validators use $12 V_{DC}$.

DISPLAYS

The EPR is a remote display designed to provide remote access to system components. The display is relatively small, light, and requires only a data and power connection to the system. EPR displays connect to a system as if they were safes. Due to physical separation from other system components, the display must be supplied with its own $9 V_{DC}$ power supply. To add or remove displays from the system, refer to the programming procedures in Section 5. There are no field serviceable components inside the EPR.

9 ELECTRICAL

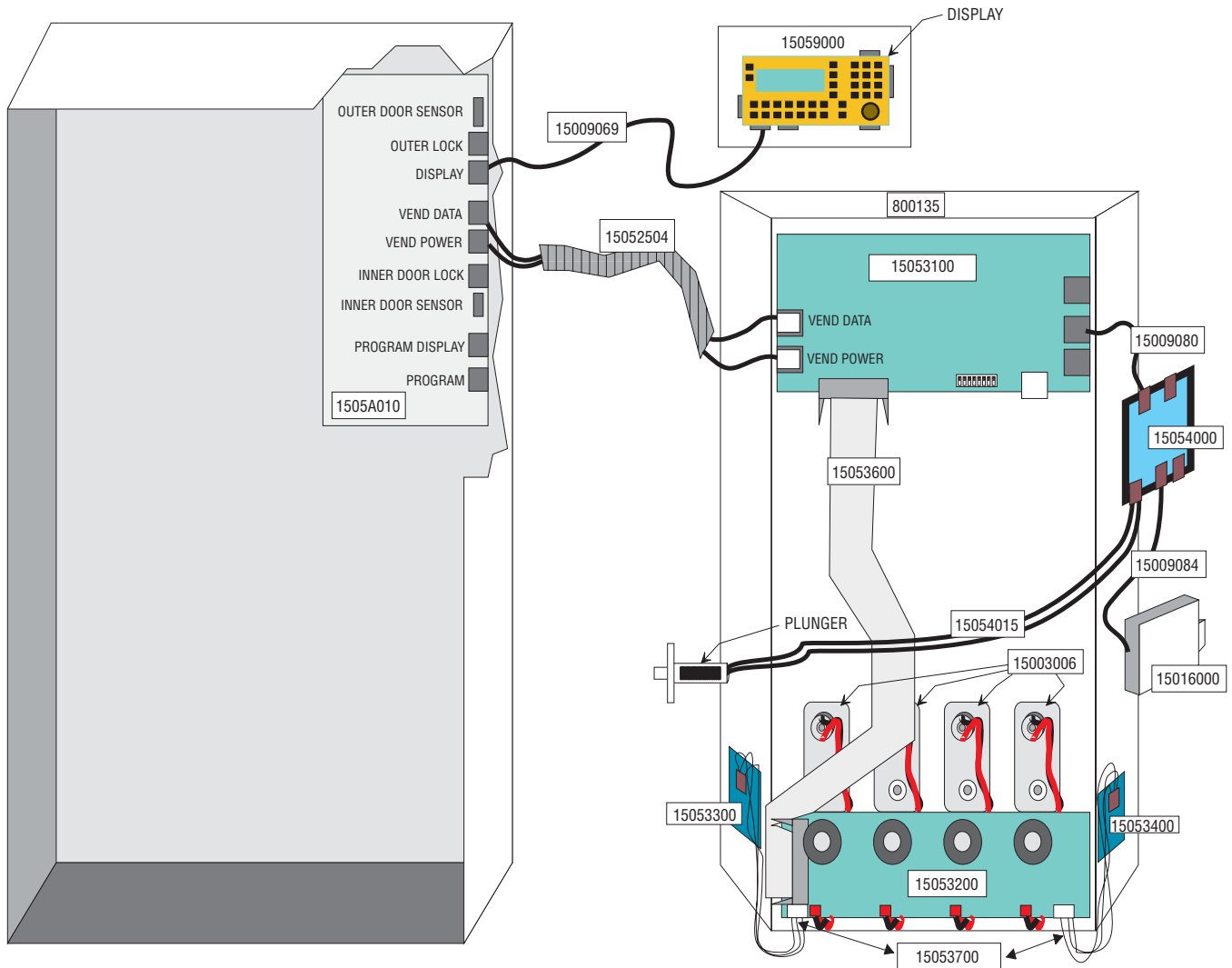


Figure 9-1: D8C (Single Door) Wiring Diagram

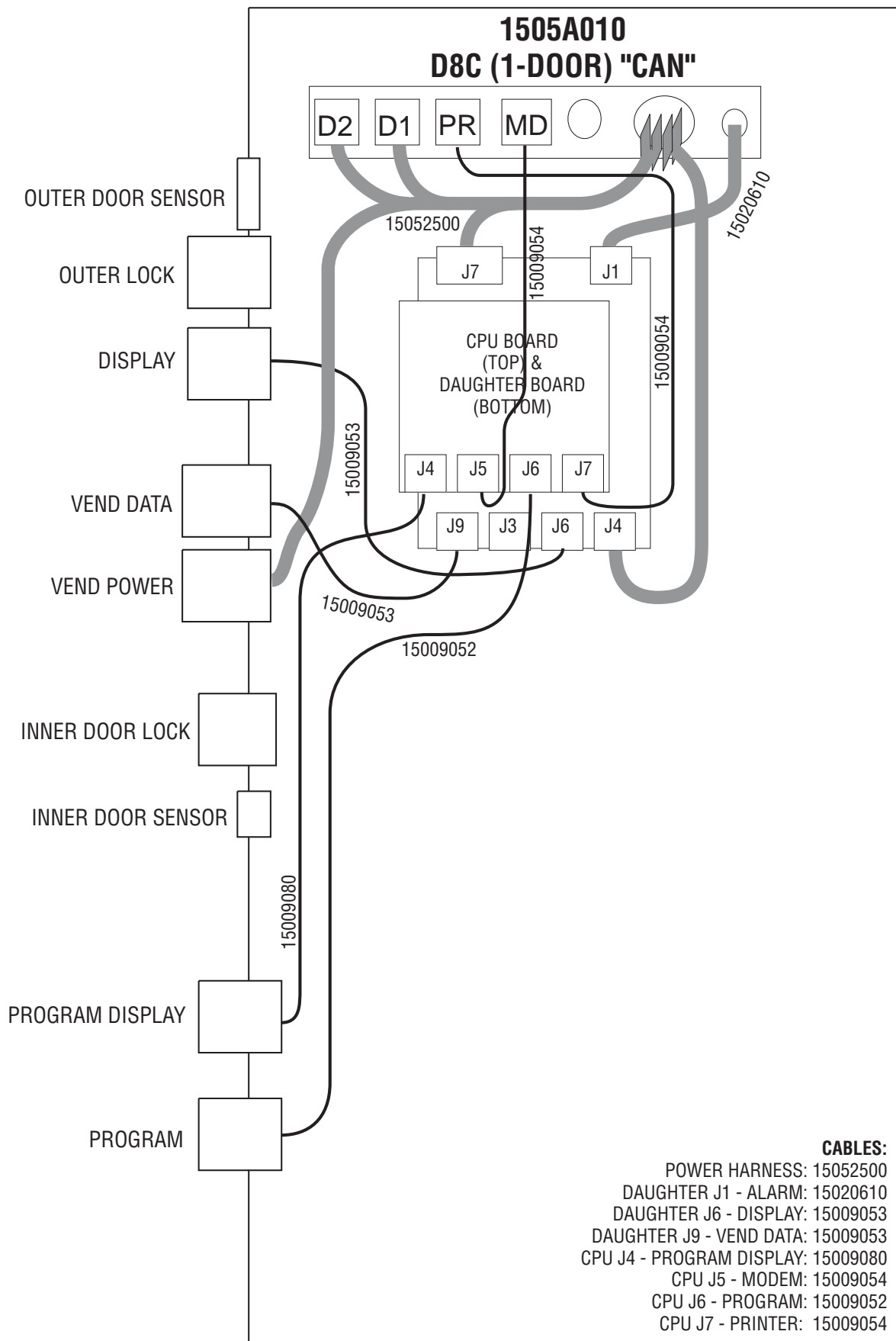


Figure 9-2: D8C (Single Door) Inner Electronics Assembly

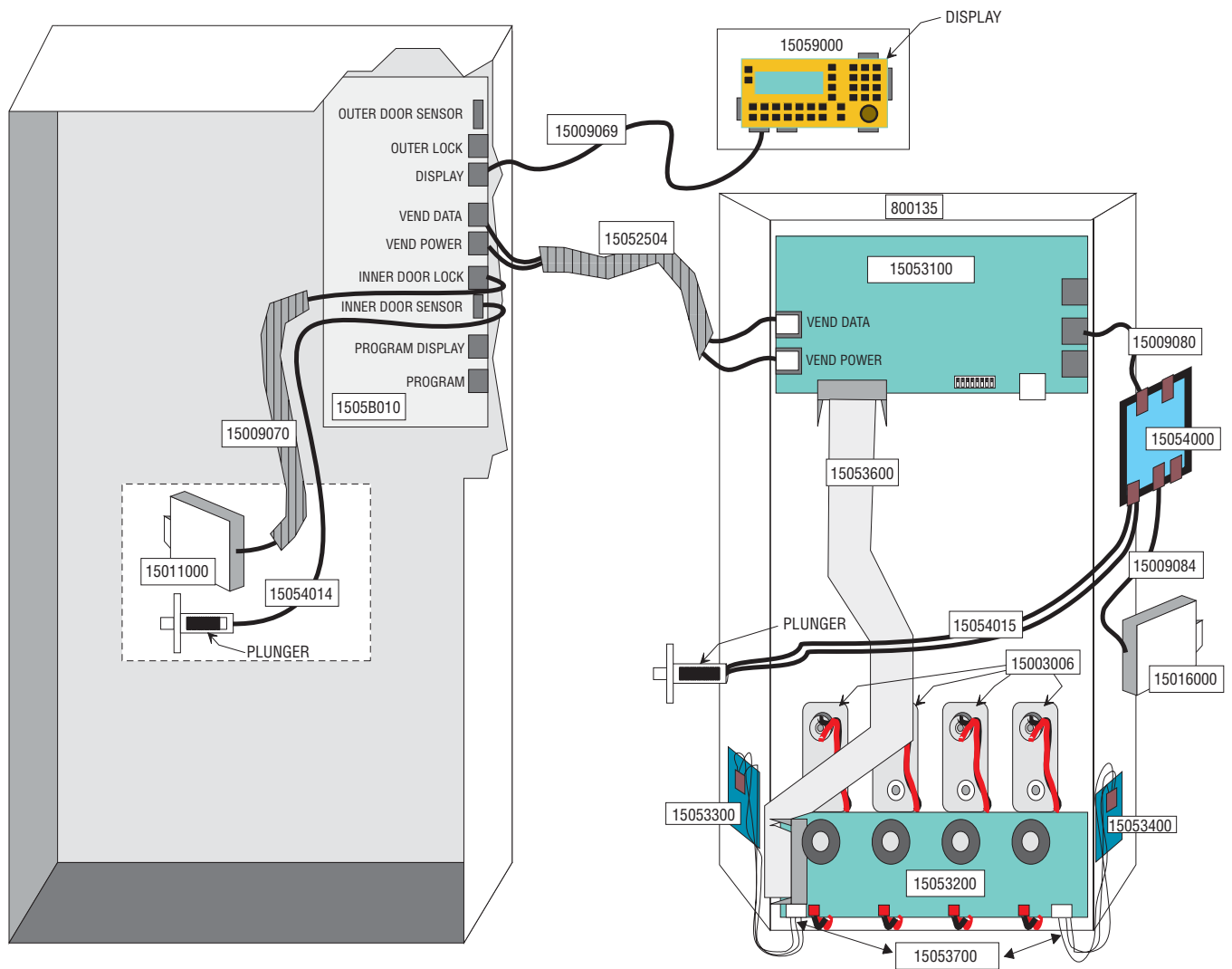


Figure 9-3: D8CI (2 Door) Wiring Diagram

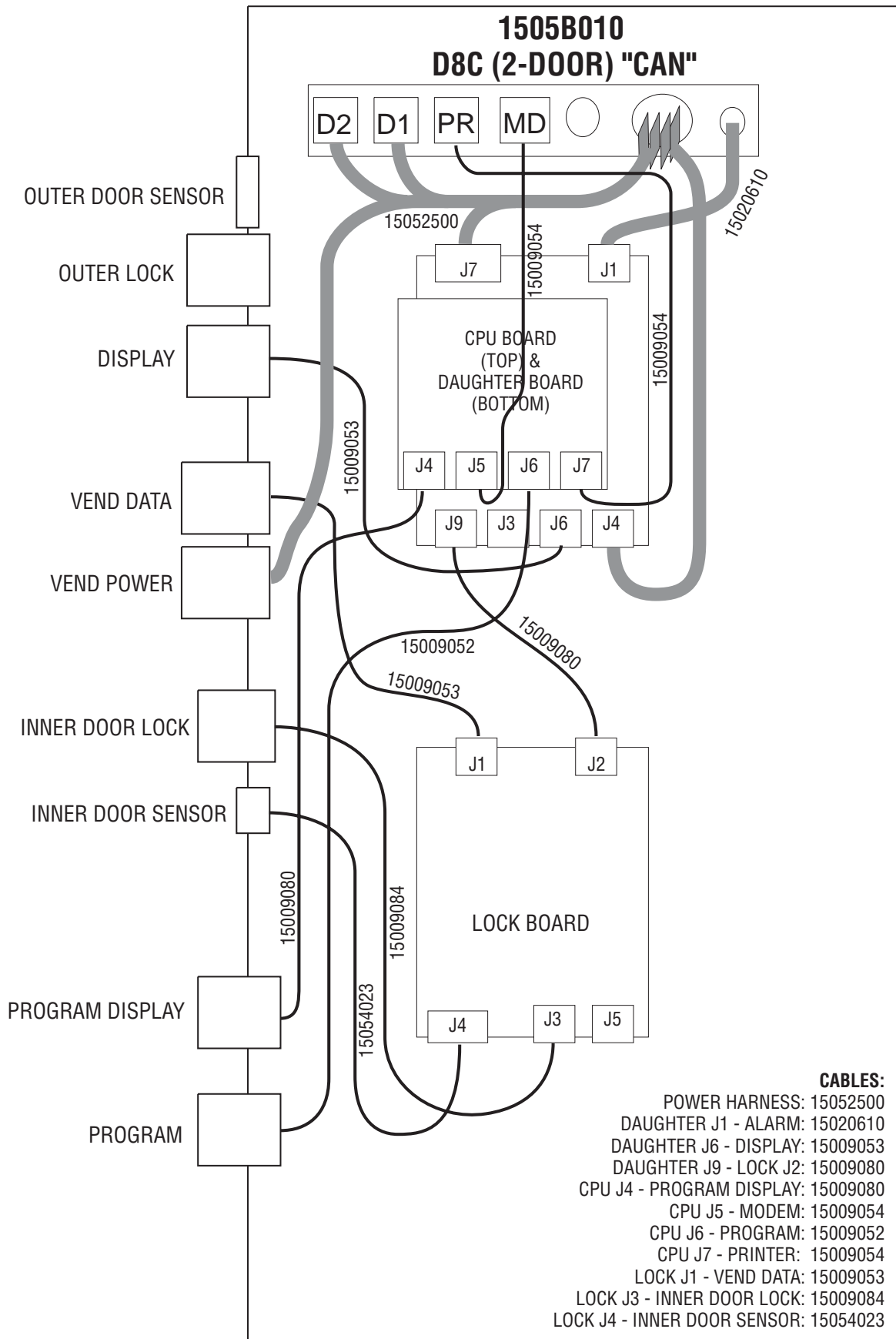


Figure 9-4: D8CI (2 Door) Inner Electronics Assembly

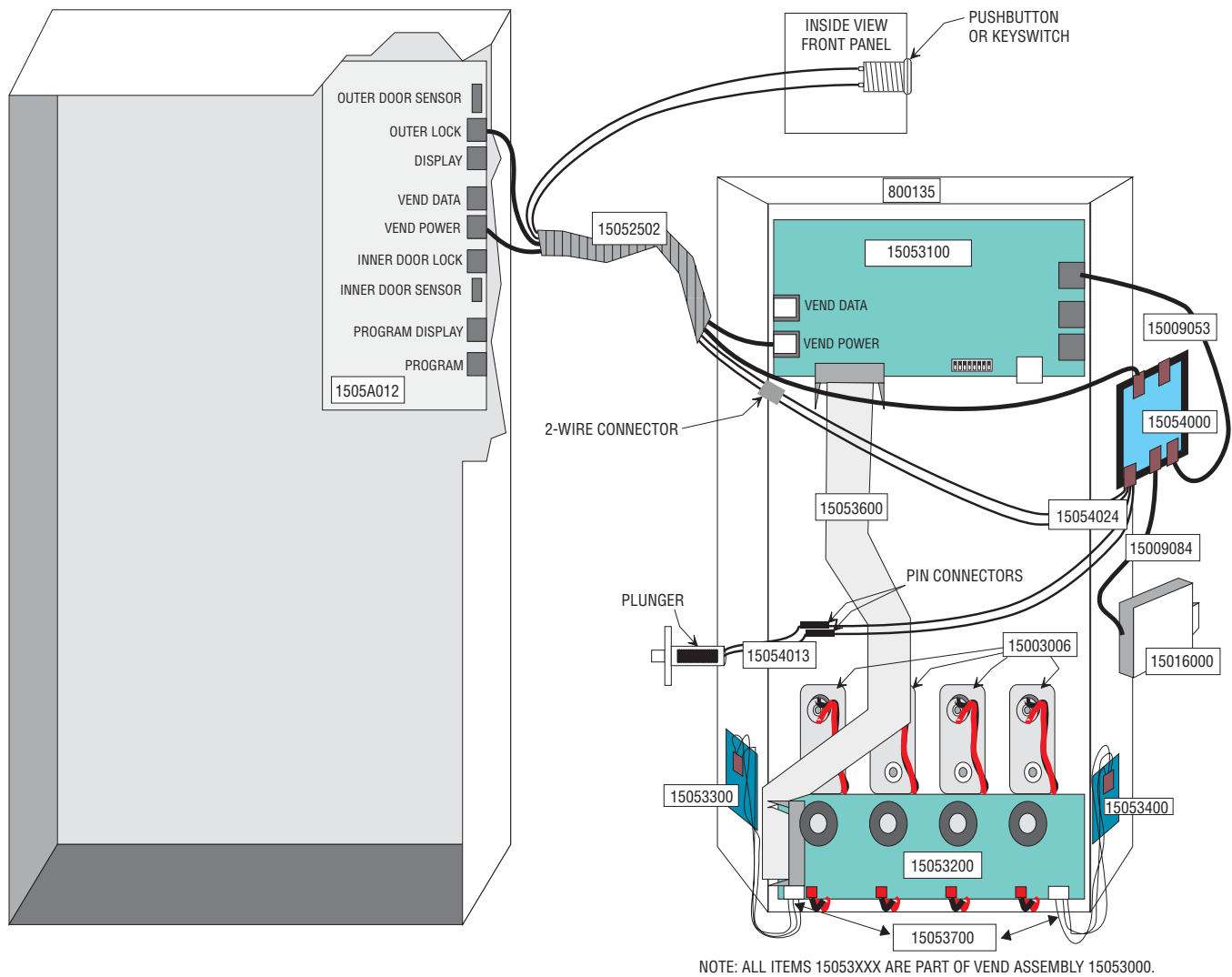
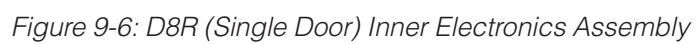


Figure 9-5: D8R (Single Door) Wiring Diagram



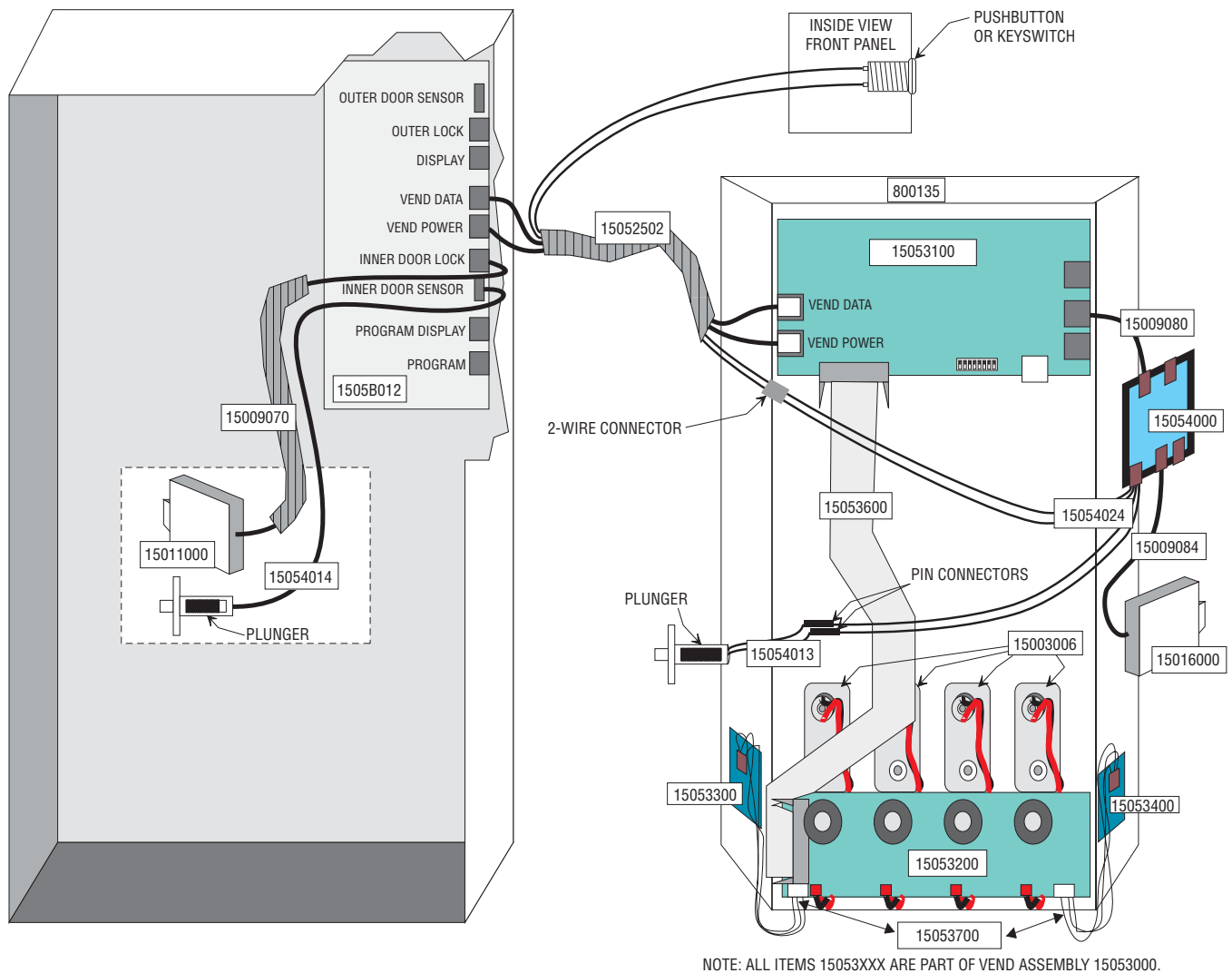


Figure 9-7: D8RI (2 Door) Wiring Diagram

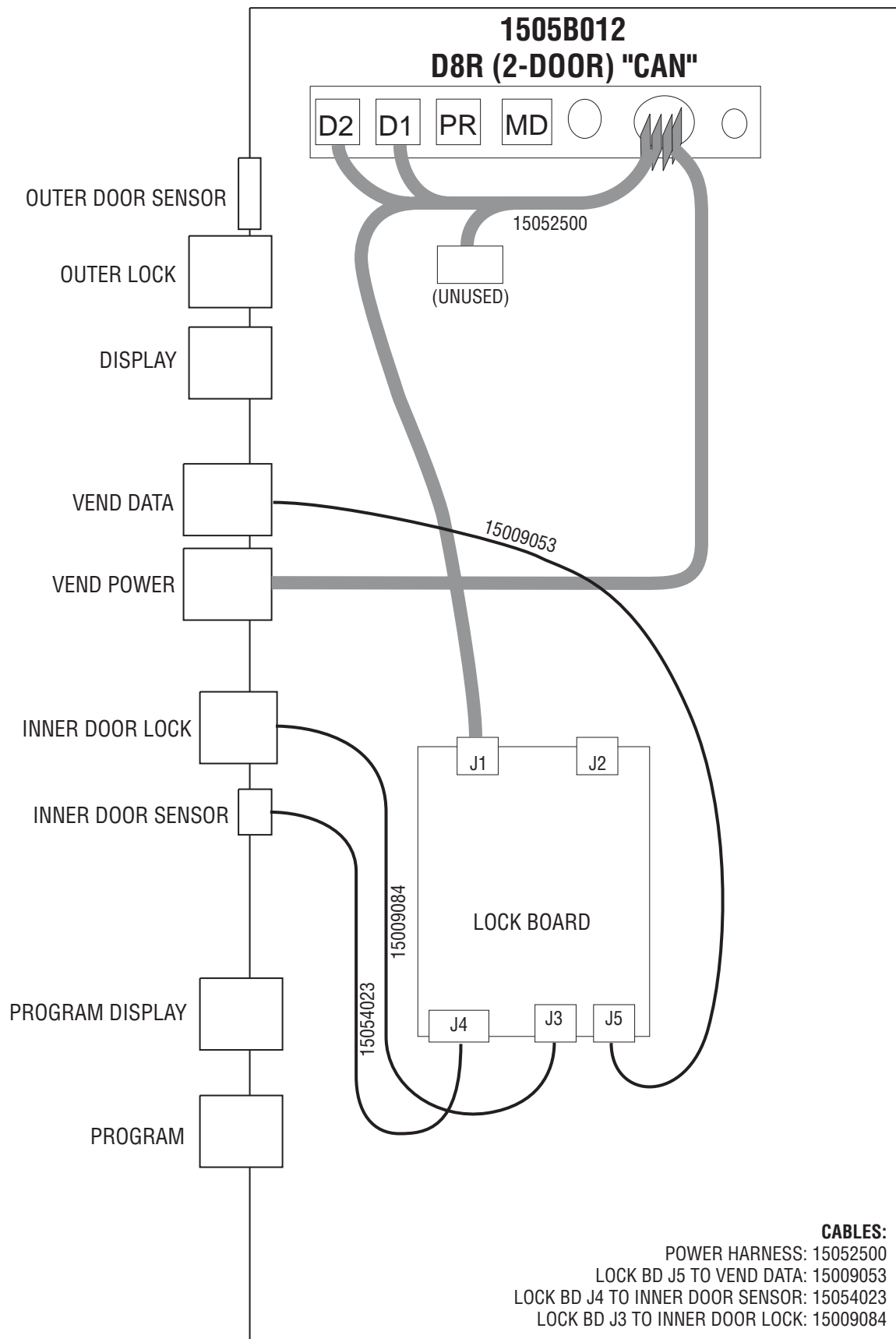


Figure 9-8: D8RI (2 Door) Inner Electronics Assembly

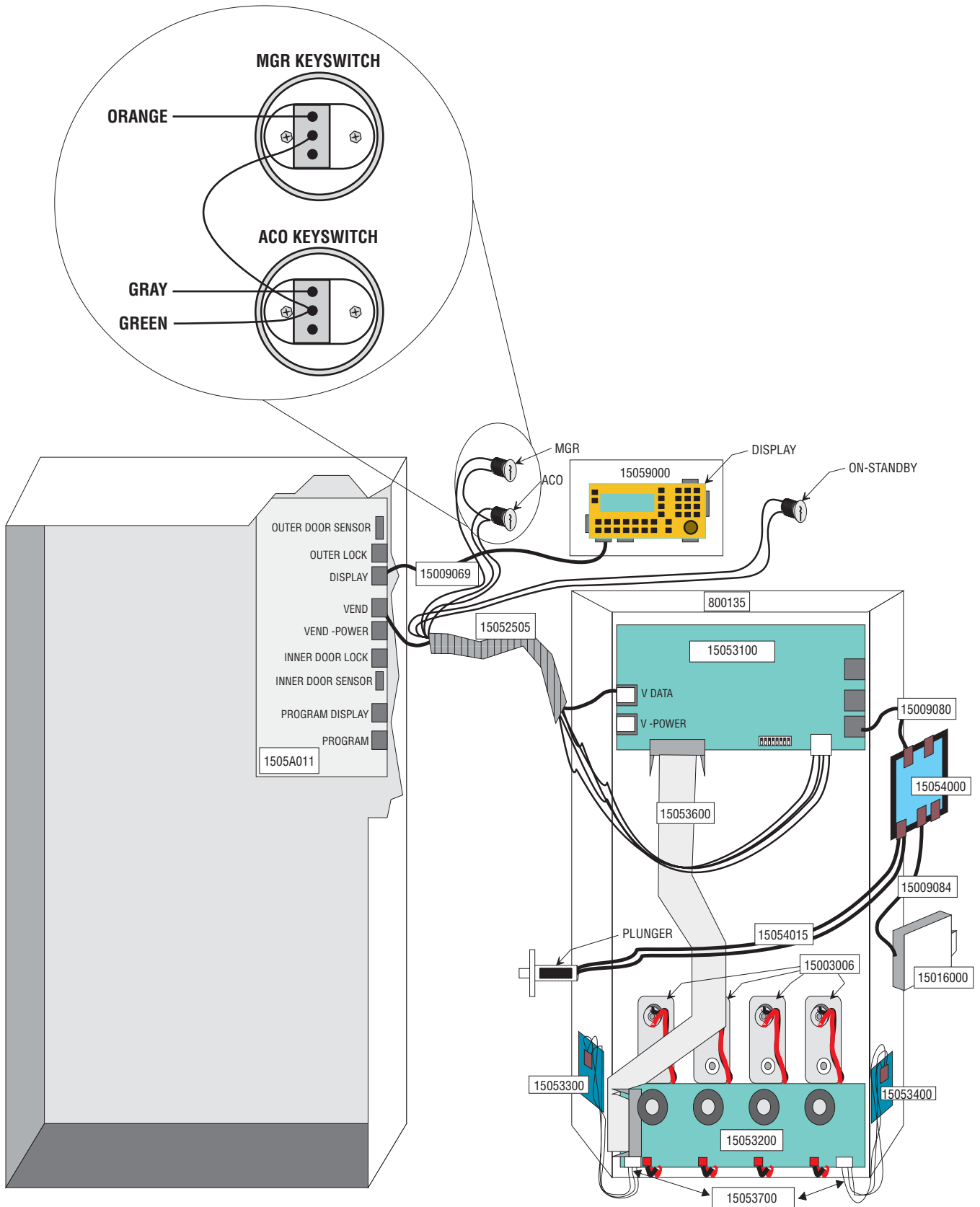


Figure 9-9: D8X Wiring Diagram

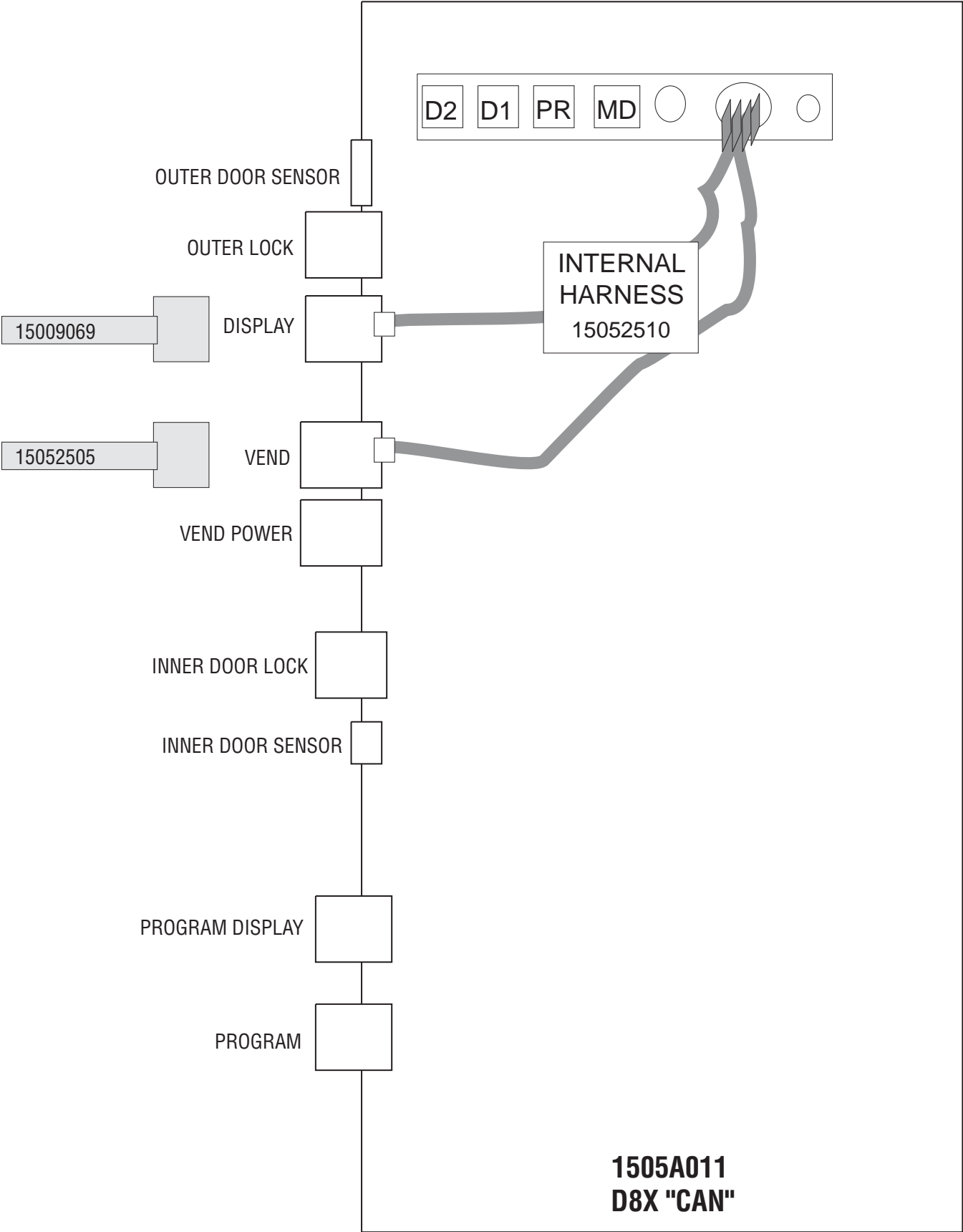


Figure 9-10: D8X Inner Electronics Assembly

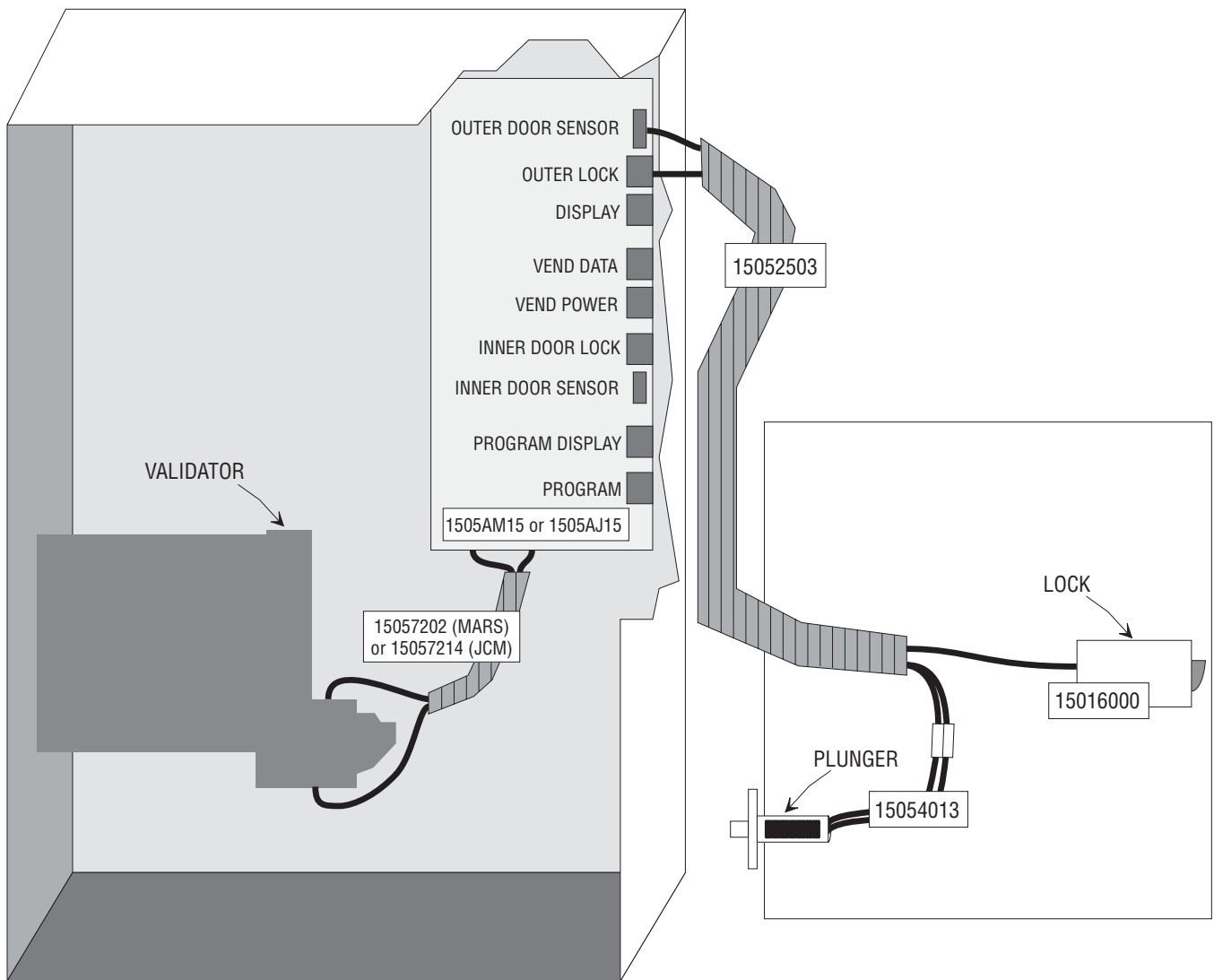


Figure 9-11: V1C Wiring Diagram

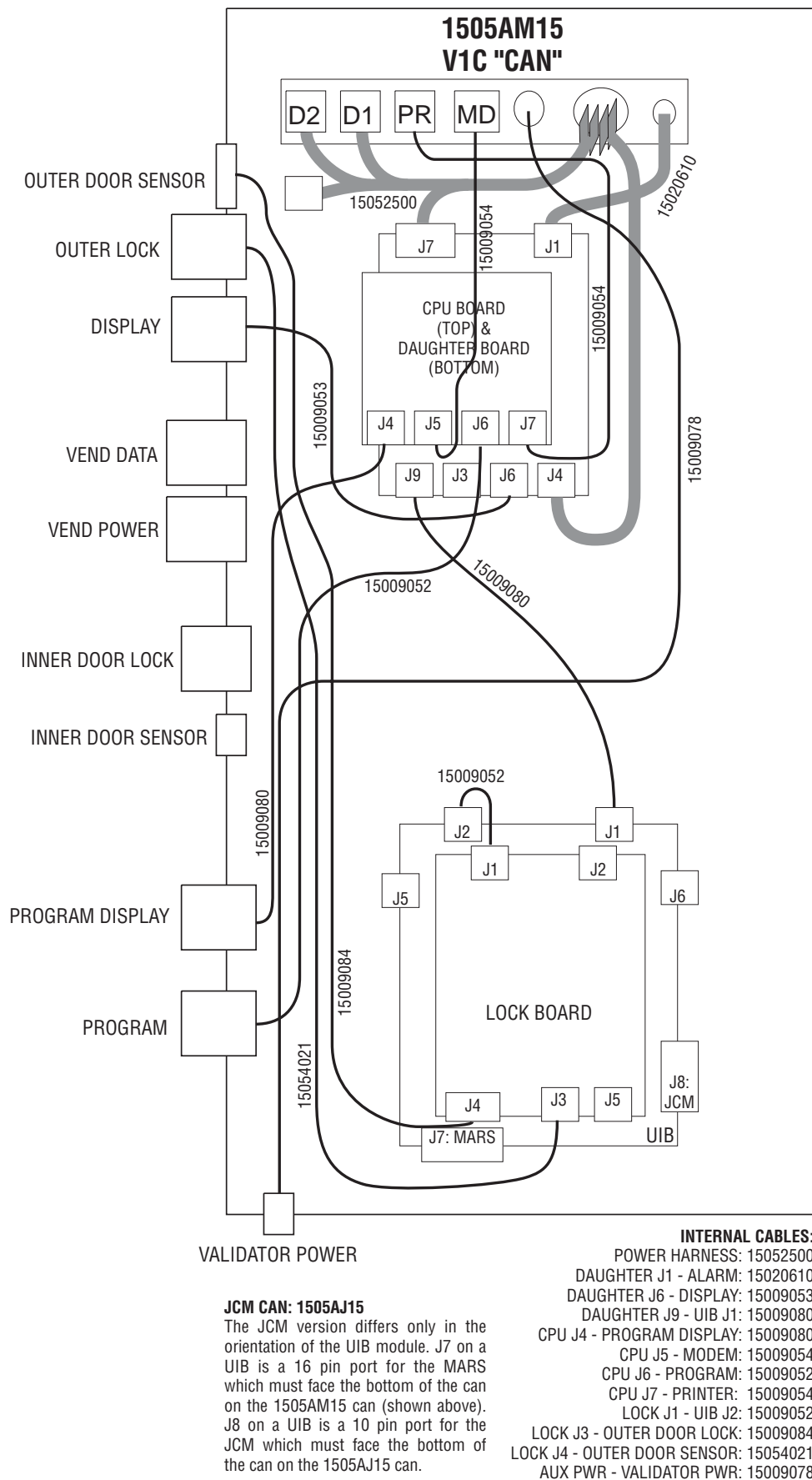


Figure 9-12: V1C Inner Electronics Assembly

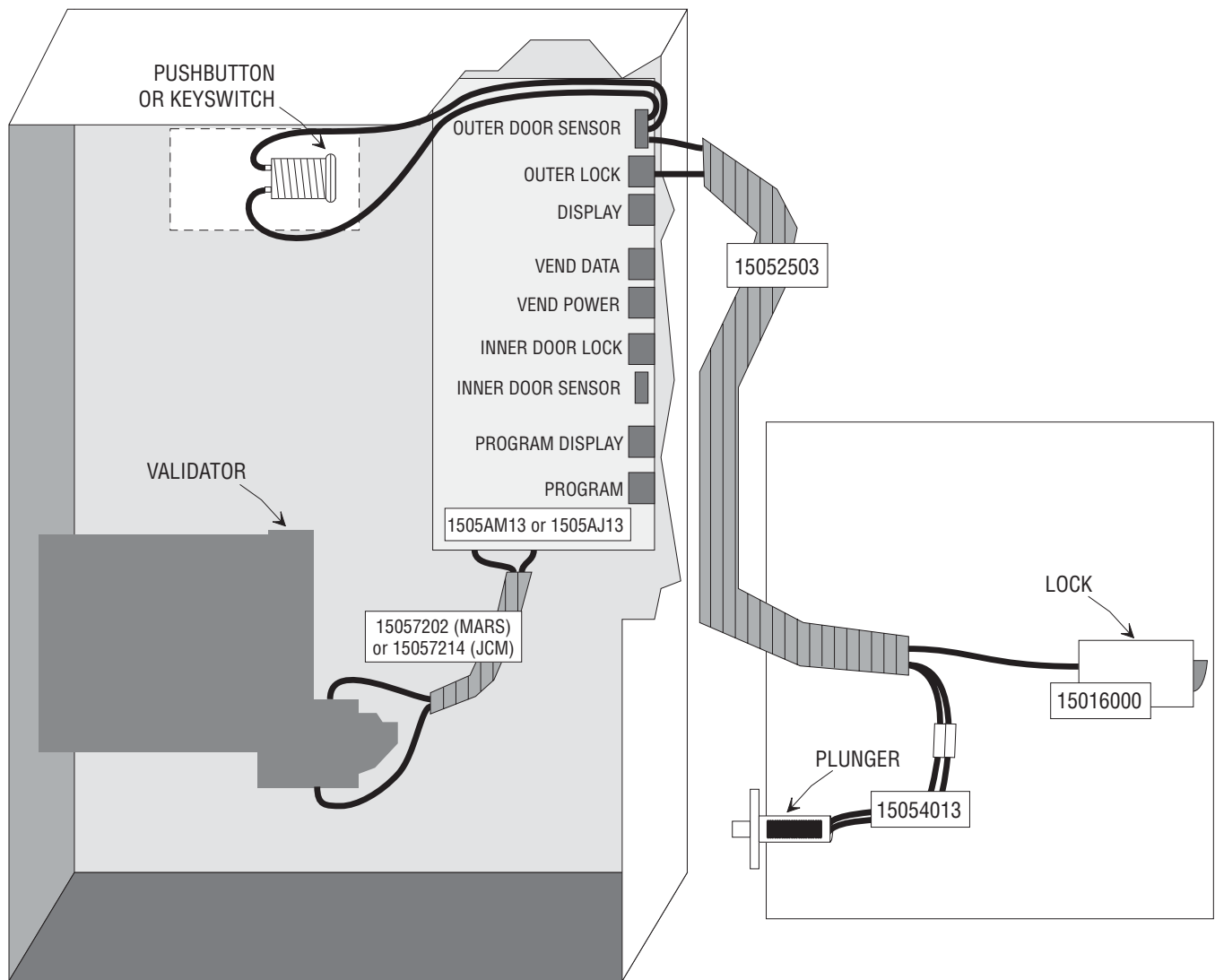


Figure 9-13: V1R Wiring Diagram

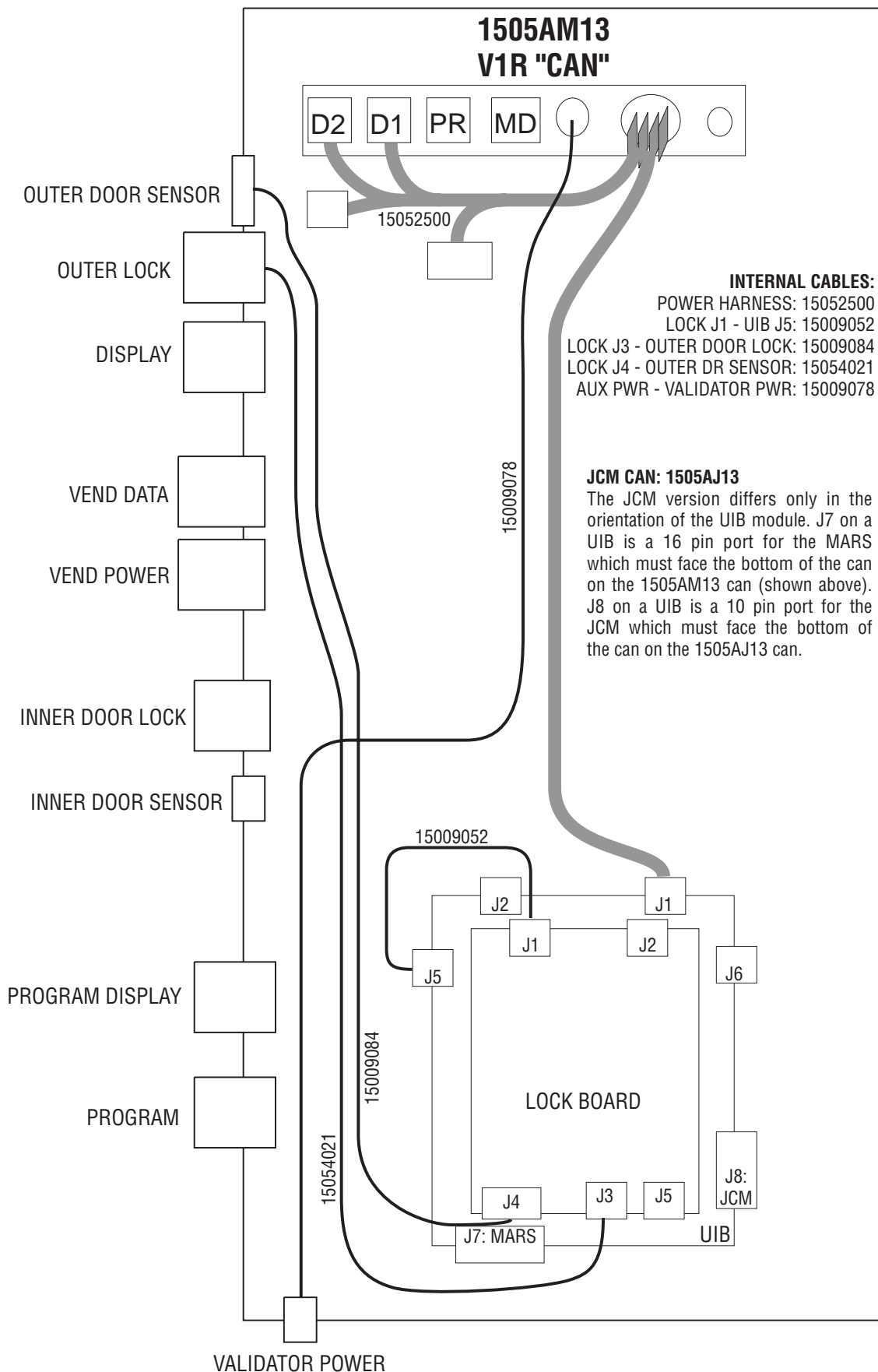


Figure 9-14: V1R Inner Electronics Assembly

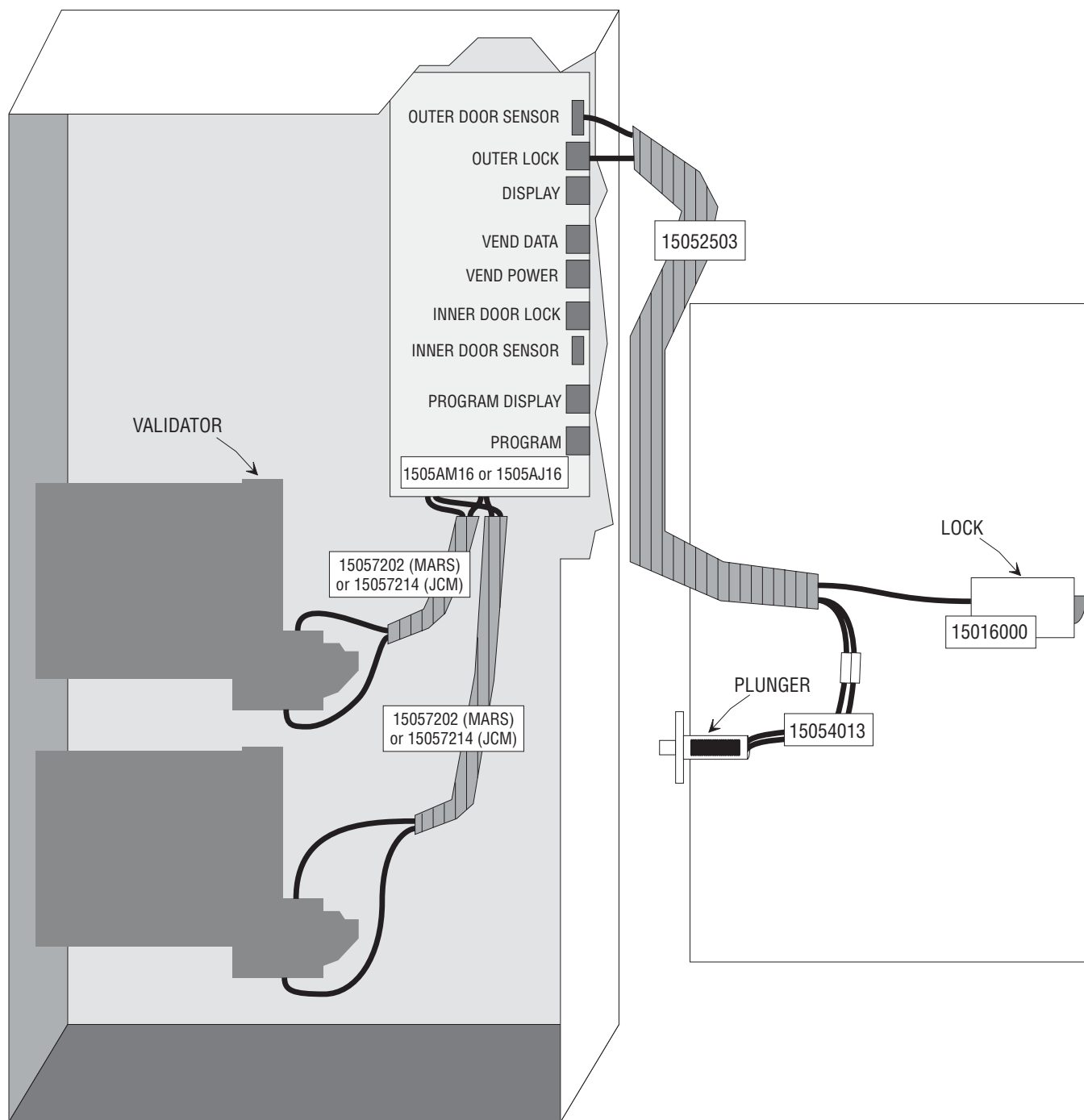


Figure 9-15: V2C Wiring Diagram

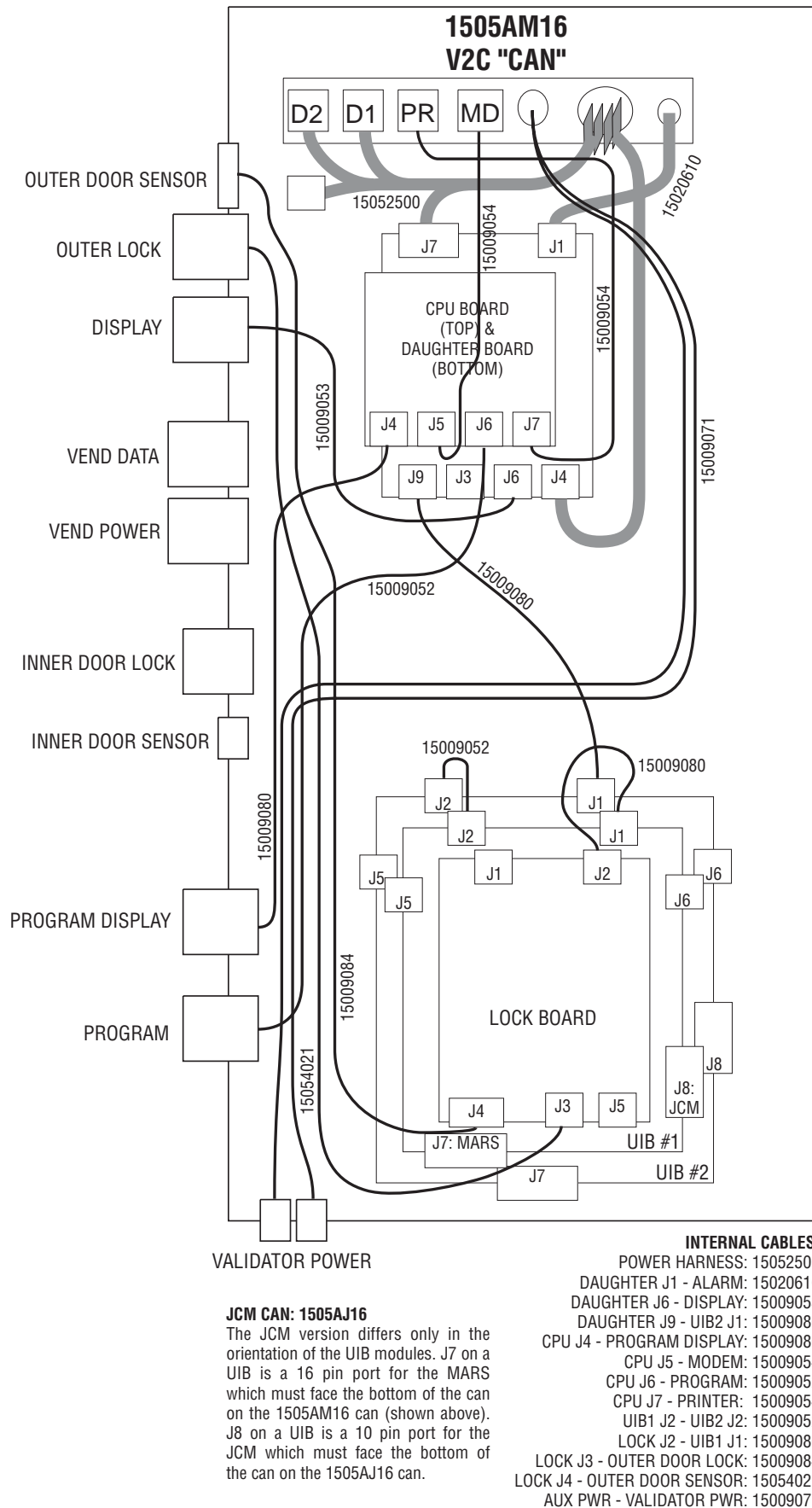


Figure 9-16: V2C Inner Electronics Assembly

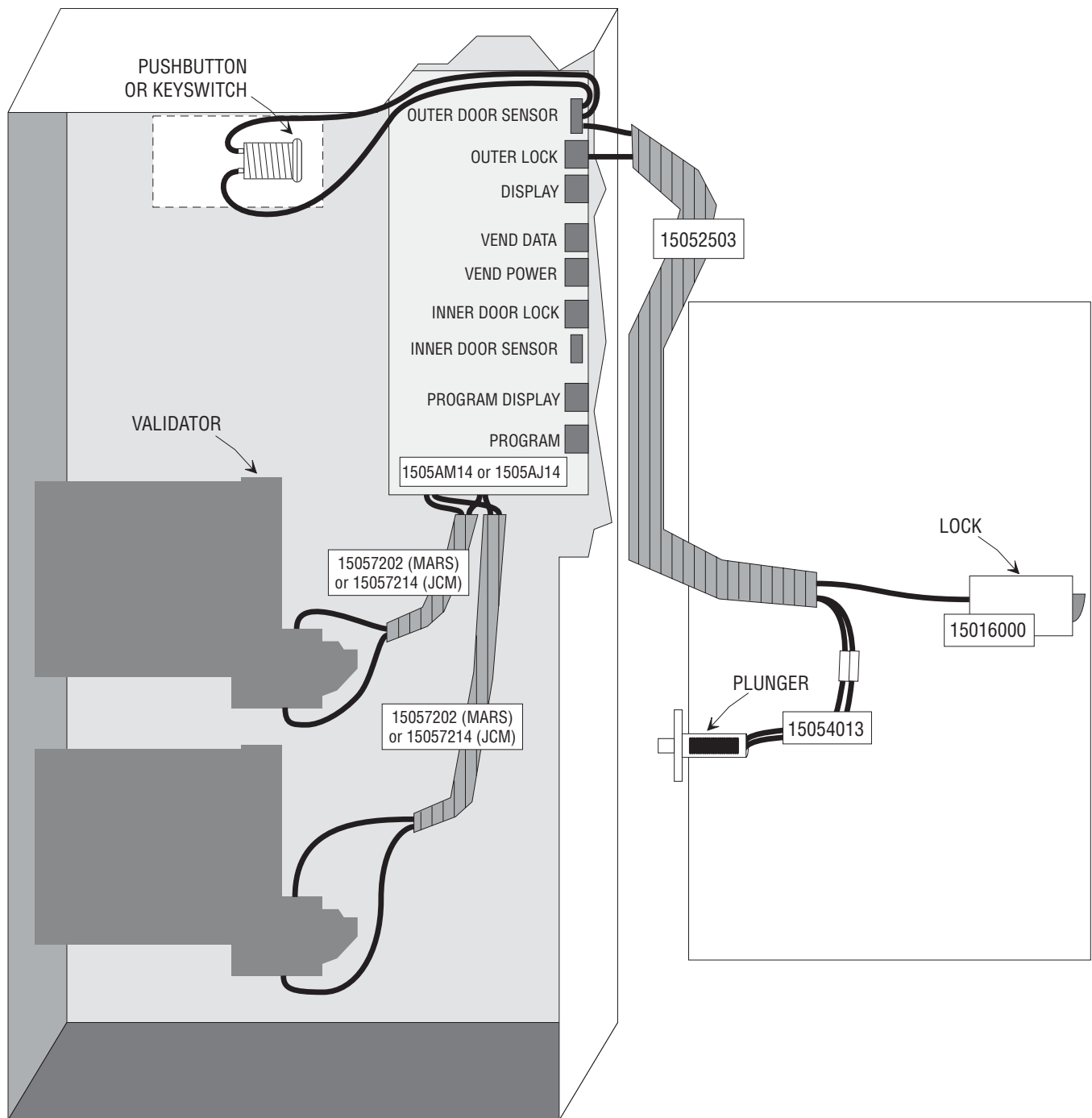


Figure 9-17: V2R Wiring Diagram

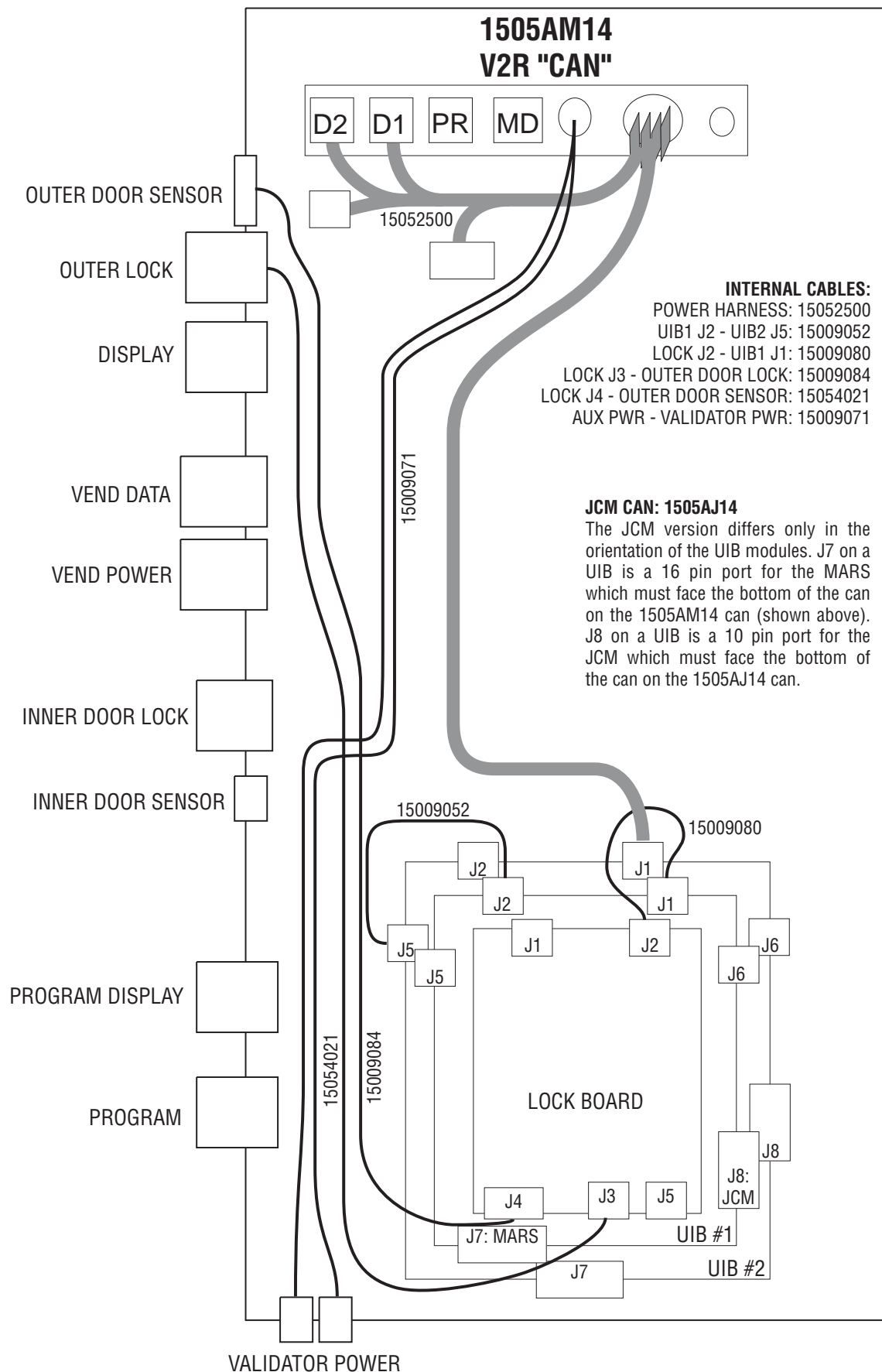


Figure 9-18: V2R Inner Electronics Assembly

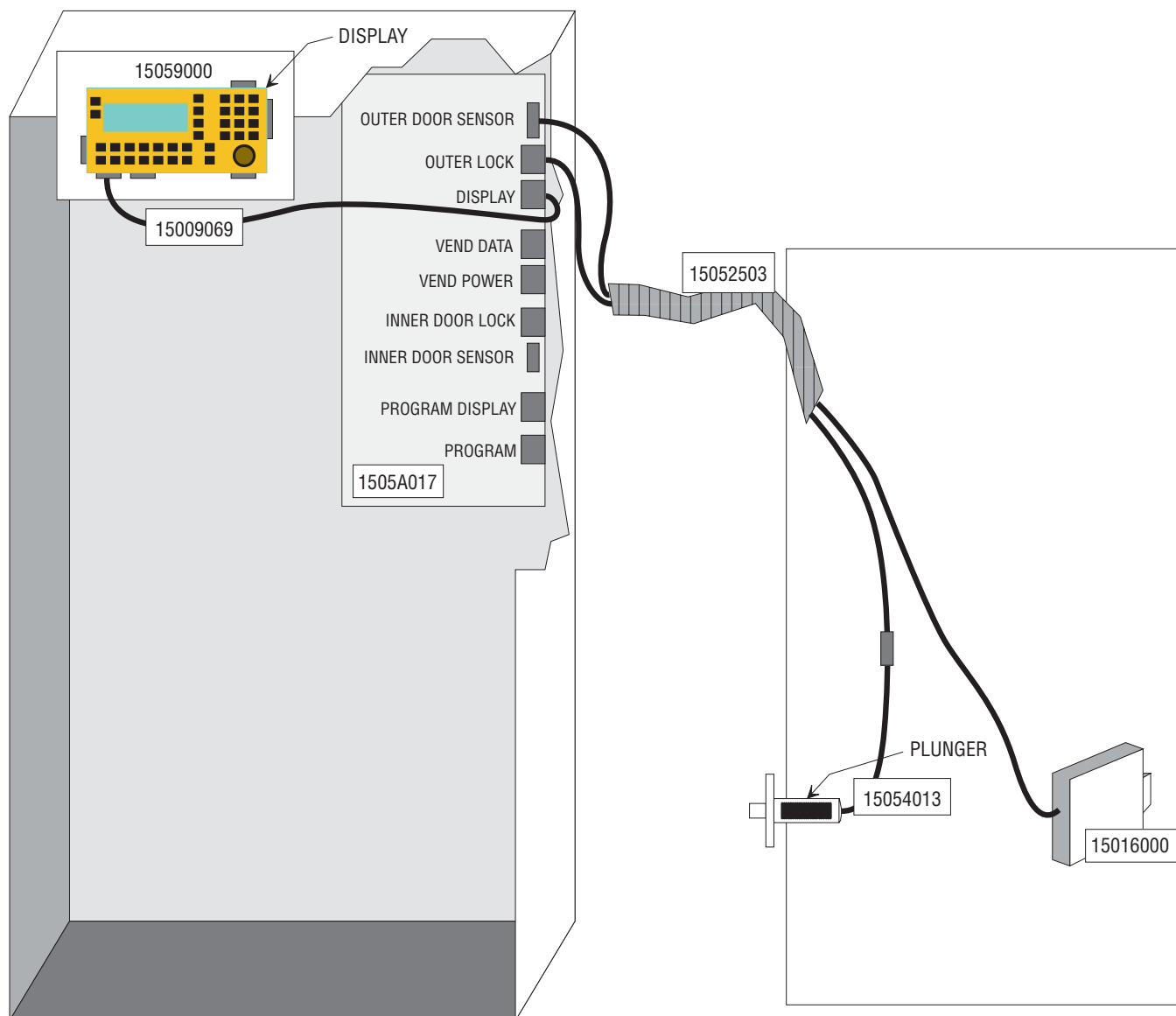


Figure 9-19: AXC (Single Door) Wiring Diagram

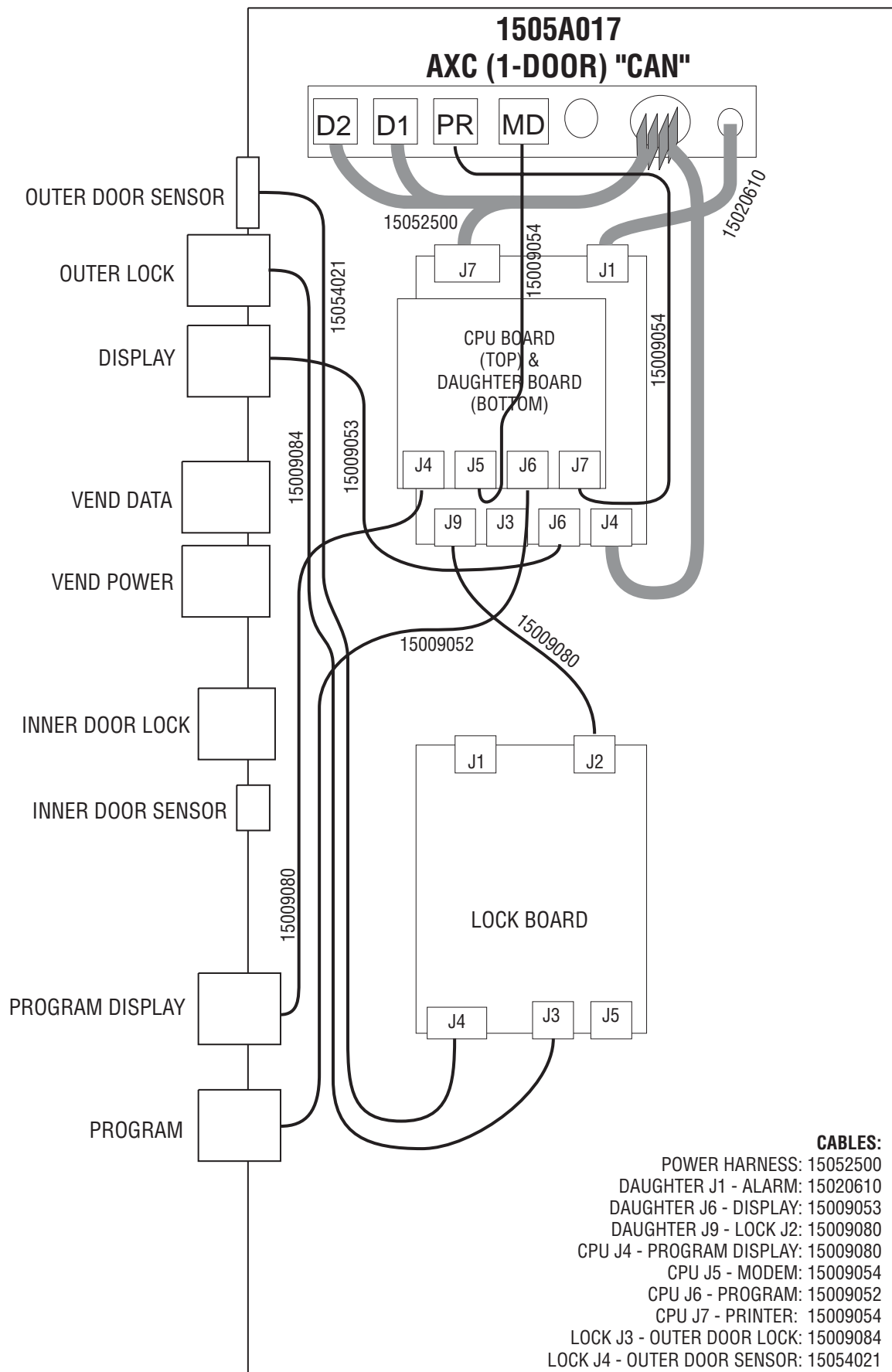


Figure 9-20: AXC (Single Door) Inner Electronics Assembly

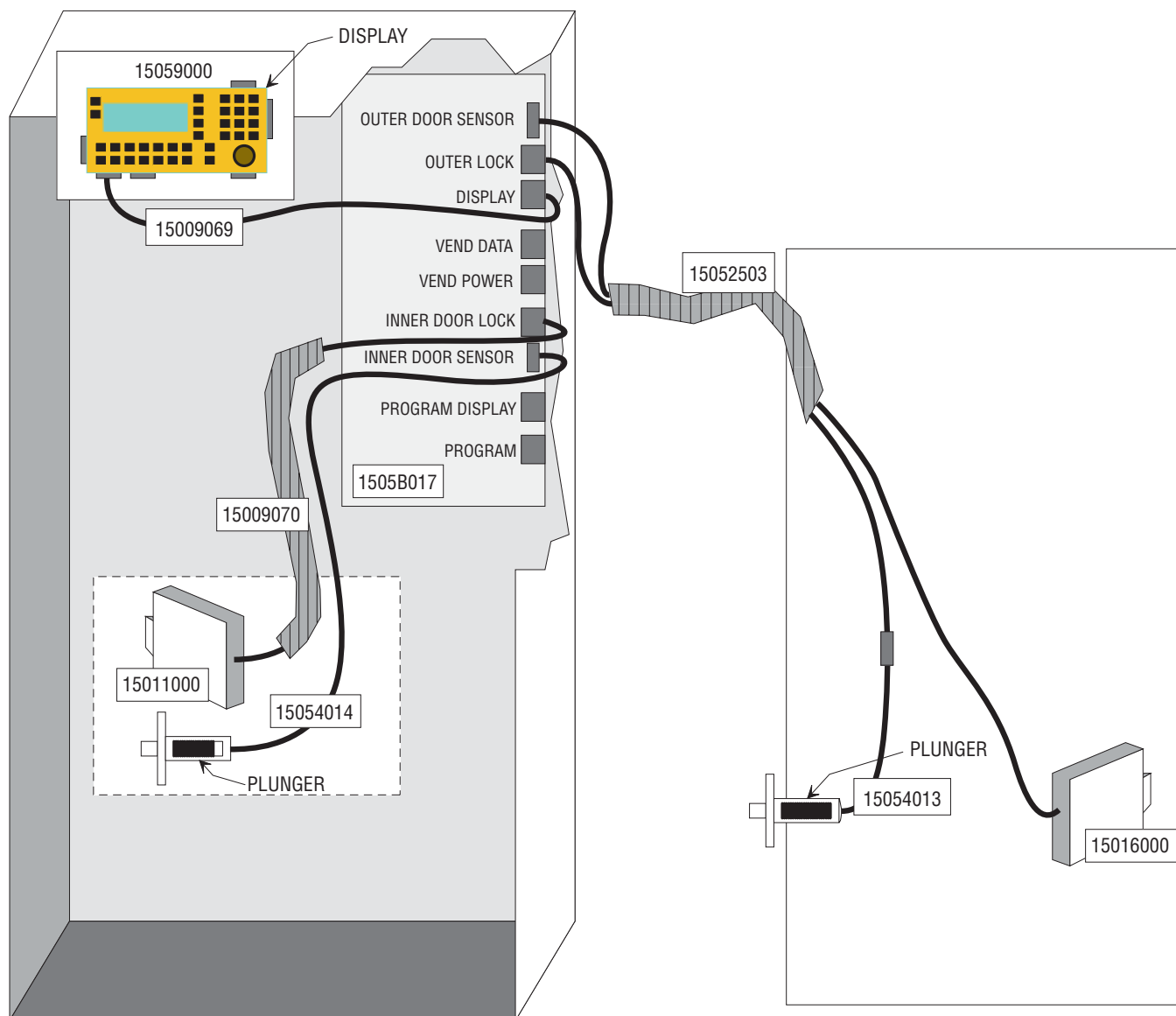


Figure 9-21: AXC (2-Door) Wiring Diagram

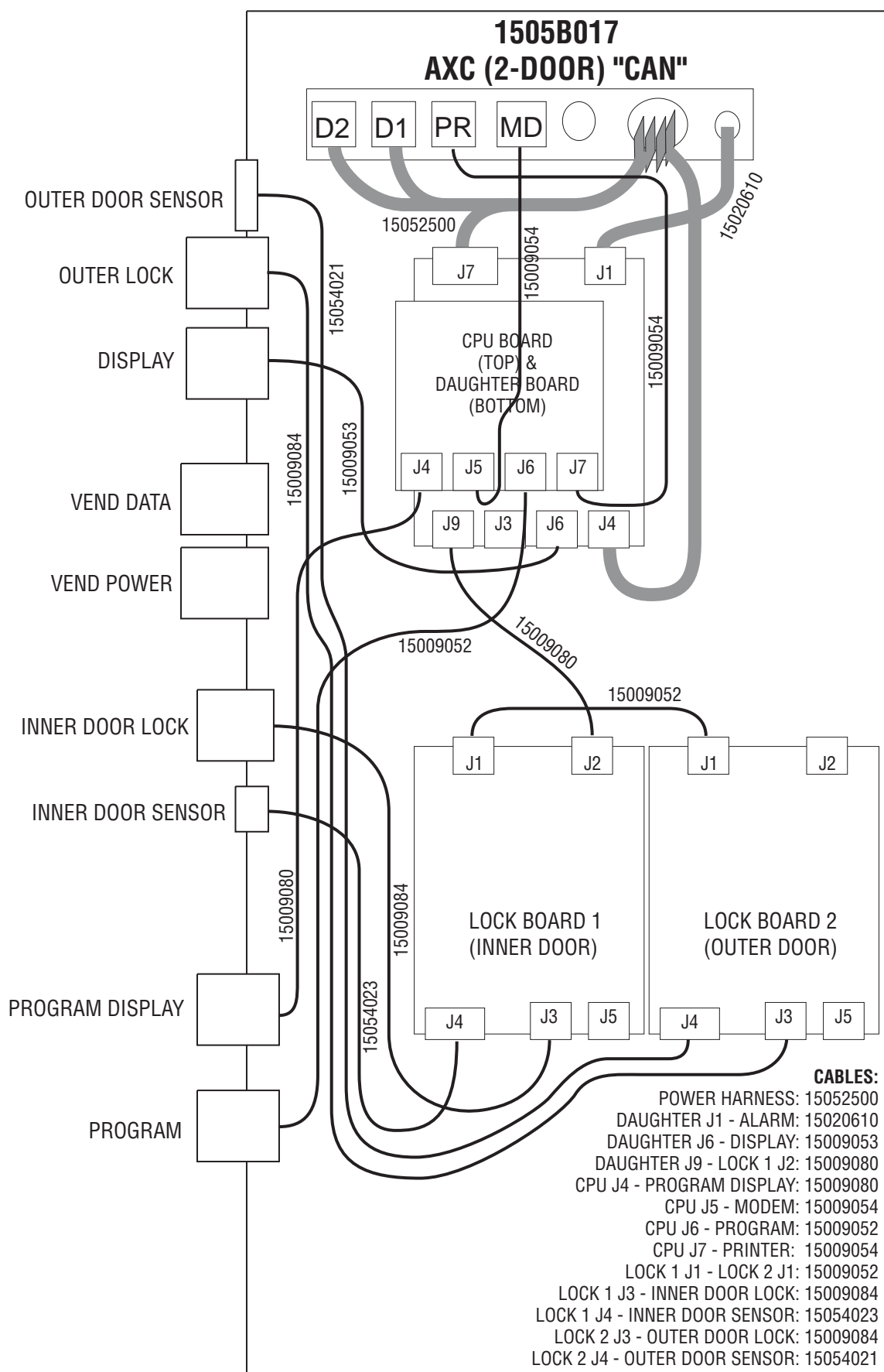


Figure 9-22: AXC (2-Door) Inner Electronics Assembly

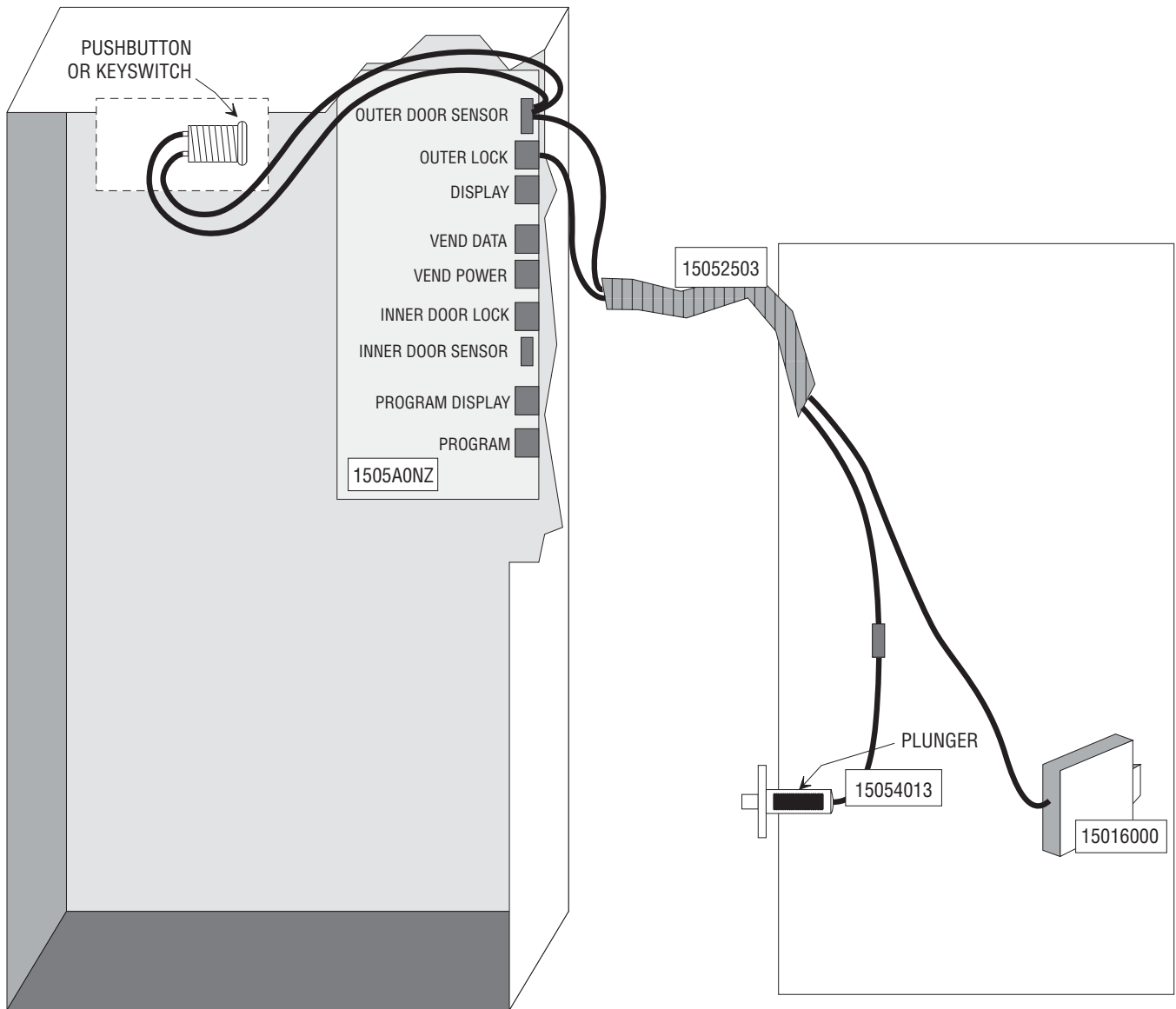


Figure 9-23: AXR (Single Door) Wiring Diagram

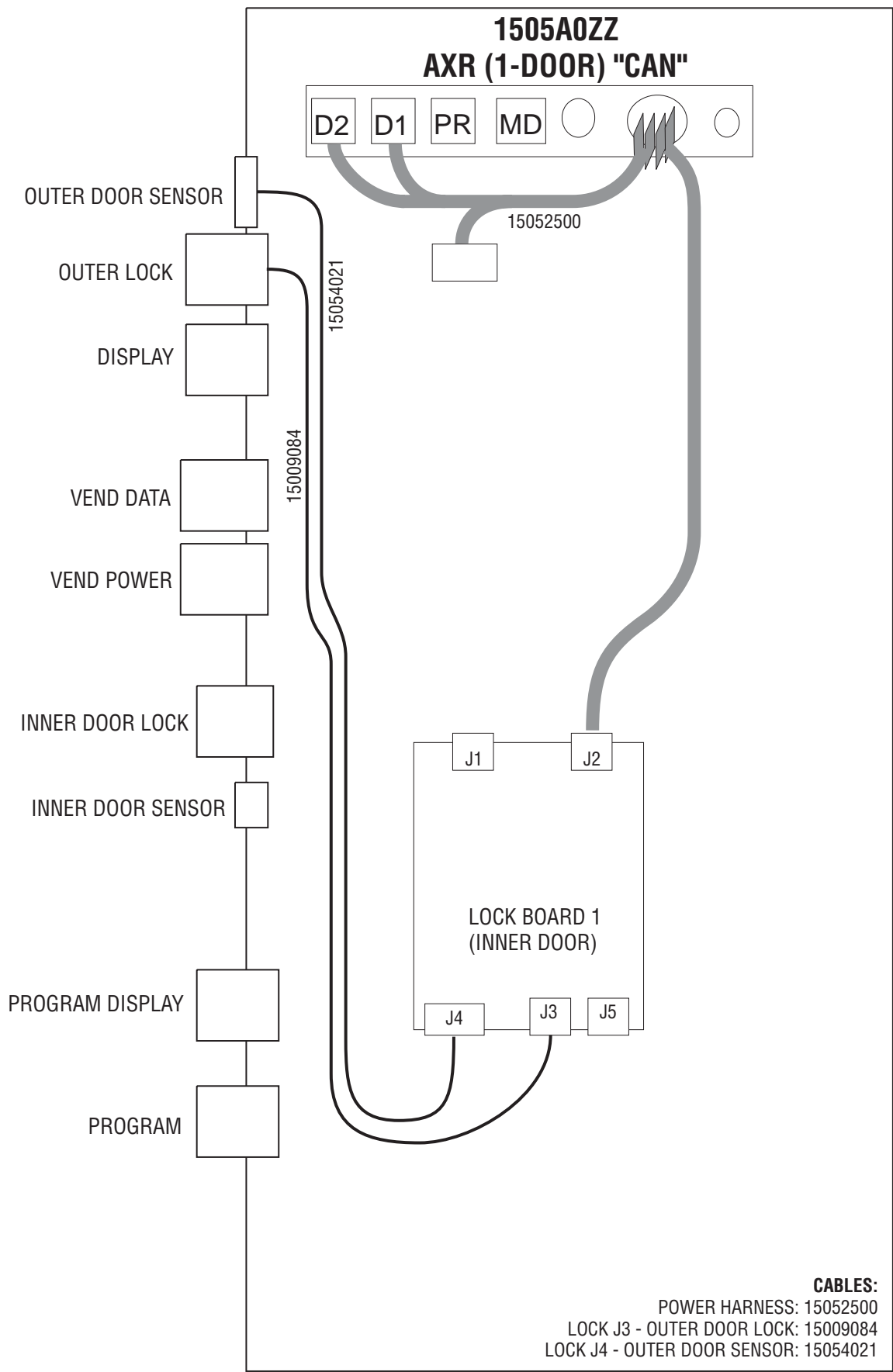


Figure 9-24: AXR (Single Door) Inner Electronics Assembly

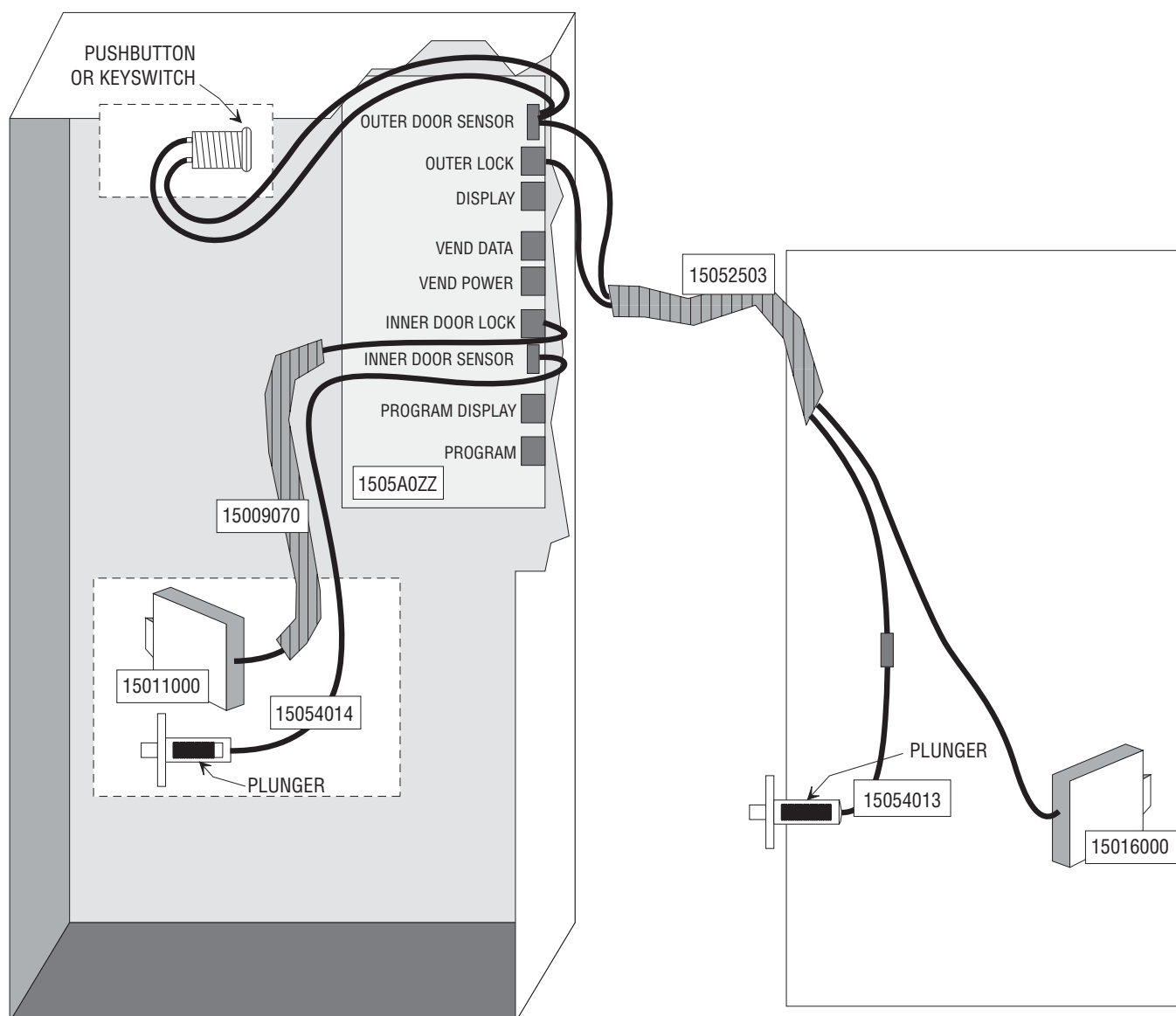


Figure 9-25: AXR (2-Door) Wiring Diagram

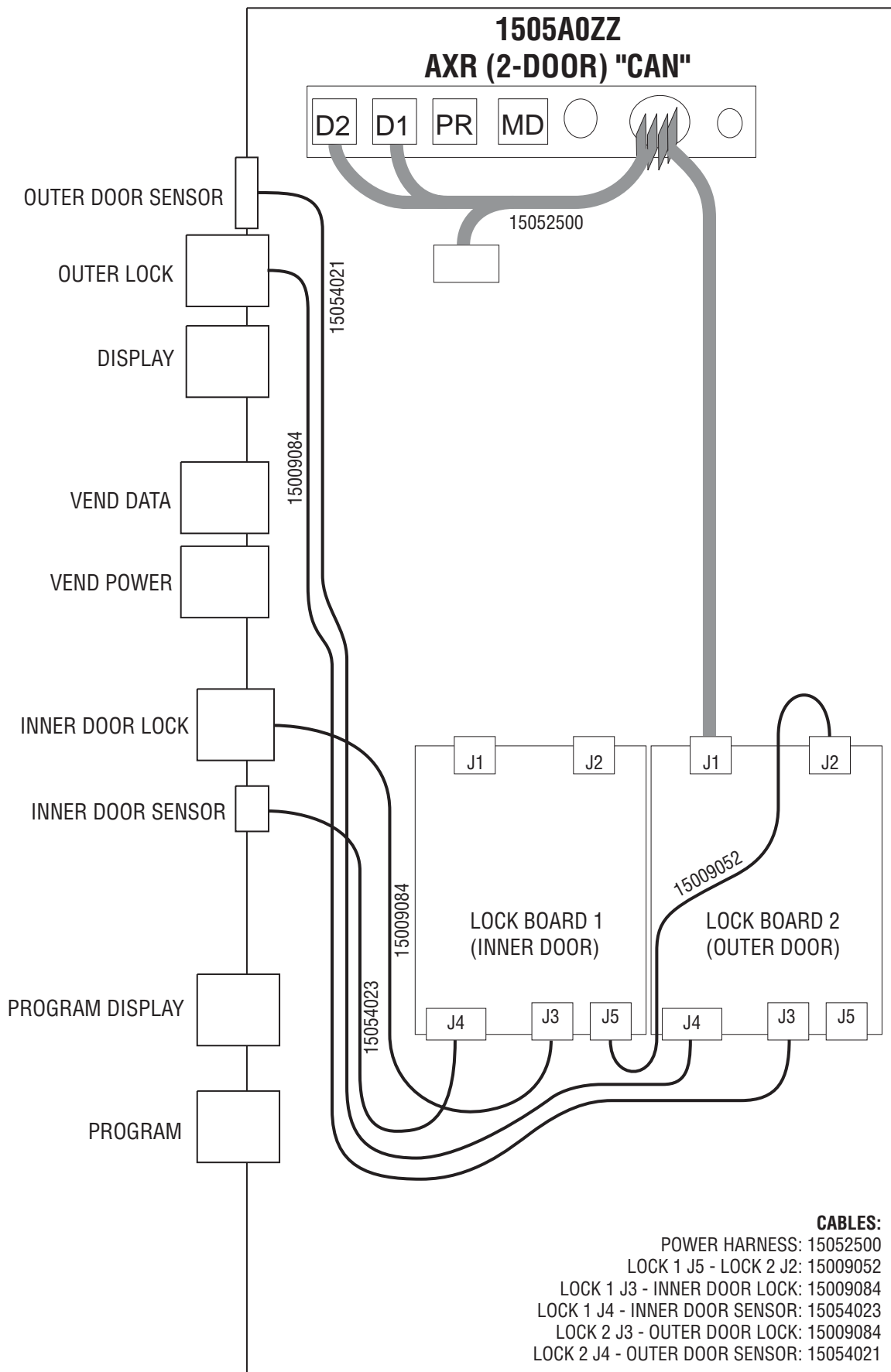
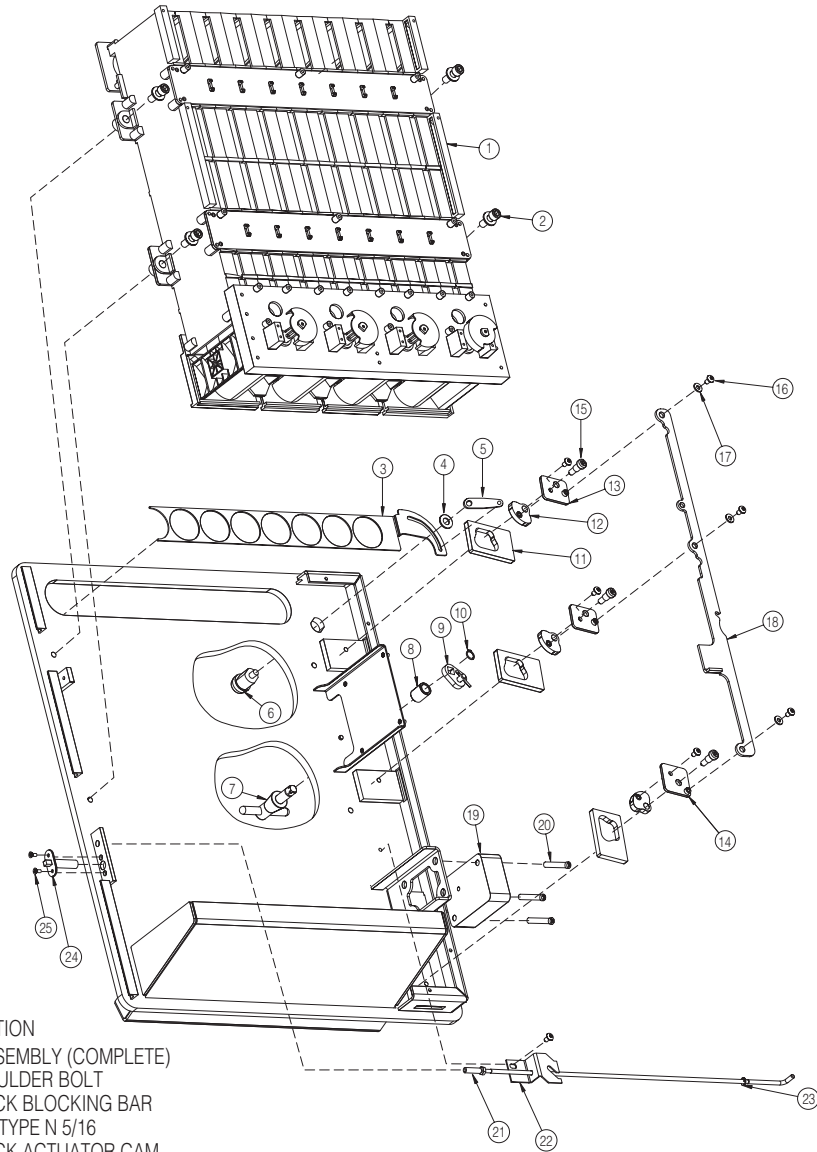


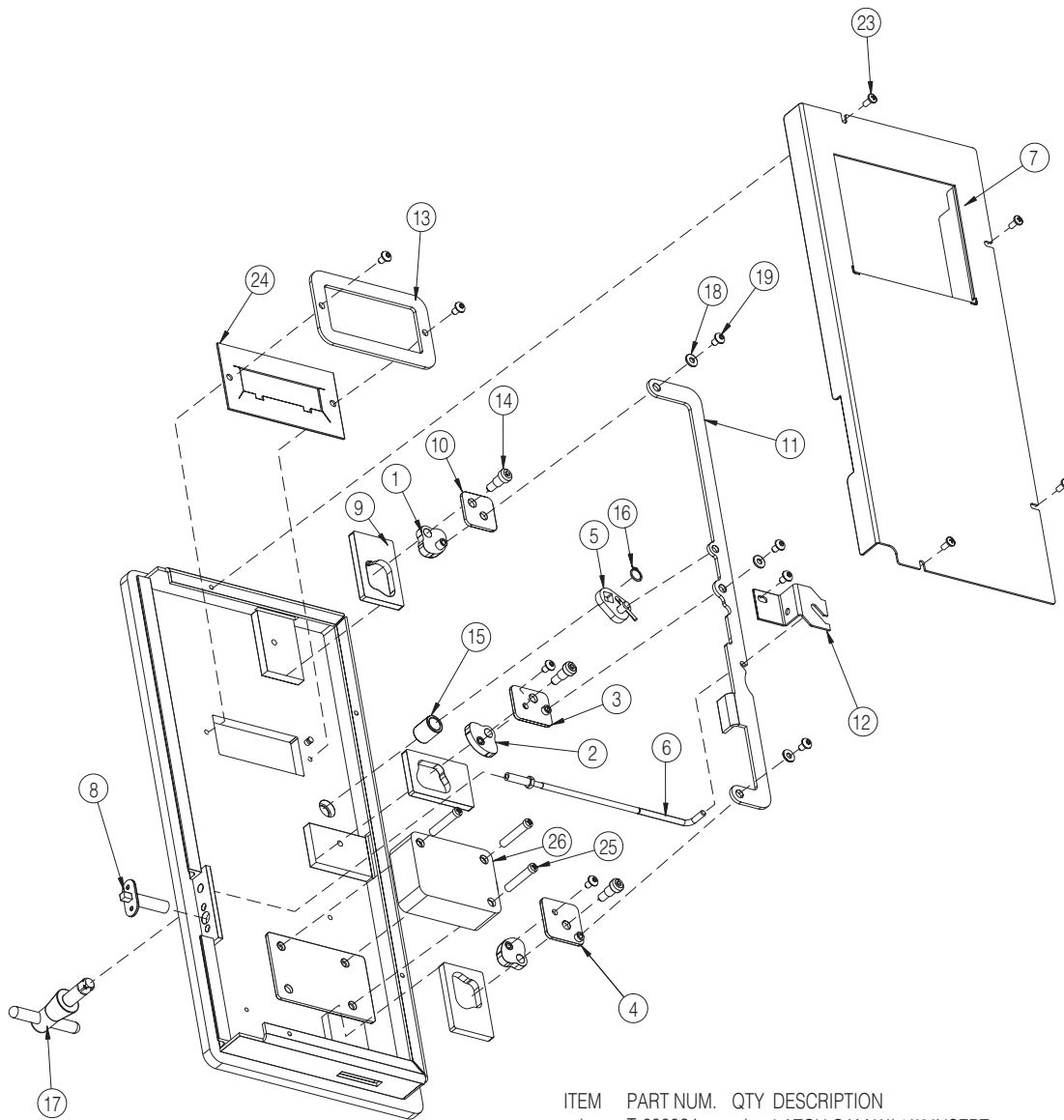
Figure 9-26: AXR (2-Door) Inner Electronics Assembly

10 MECHANICAL



ITEM	PART NUM.	QTY	DESCRIPTION
1	T-15053000	1	VEND ASSEMBLY (COMPLETE)
2	T-HS1206	4	5/16 SHOULDER BOLT
3	T-16000002	1	TUBE LOCK BLOCKING BAR
4	T-800224	5	WASHER TYPE N 5/16
5	T-600113	1	TUBE LOCK ACTUATOR CAM
6	T-7034	1	MEDECO KEYSWITCH
7	T-800153	1	T HANDLE
8	T-800113	1	7/16 ID X 5/8 OD X 3/4LG OILITE BUSHING
9	T-600029	1	HANDLE ACTUATOR ASSEMBLY
10	T-800152	1	7/16 EXTERNAL RETAINING RING
11	T-700007	3	LATCH BOLT
12	T-600025	3	LATCH CAM W/ 1/4" INSERT
13	T-600027	2	SIDE ACTUATOR PLATE ASSEMBLY
14	T-600028	1	REVERSE ACTUATOR PLATE ASSEMBLY
15	T-800112	3	5/16" X 3/8 SHOULDER BOLT
16	T-800182	8	#10-32THD BUT HD SOCK CAP SCR 5/16 LG
17	T-800175	3	#8 PLAIN WASHER *7/16 OD*
18	T-700041	1	ACTUATOR LINK PLATE D8
19	T-15016000	1	ELECTRONIC LOCK
20	T-6030022	3	1/4-20thd LOCK SCREW 1-5/16"
21	T-600048	1	D8 DETENT ROD ASSEMBLY
22	T-700028	1	DETENT PLATE
23	T-800129	1	3/16 TYPE E RETAINING RING
24	T-4702AB	1	DOOR PLUNGER SWITCH
25	T-800231	2	#6-32 FLAT HD SCREW 5/16
26	T-800184	1	7/16 WAVE WASHER (NOT SHOWN)
27	T-800186	1	DOOR RELATCH TORSION SPRING (NOT SHOWN)
28	T-800218	1	COMPRESSION SPRING (NOT SHOWN)

Figure 10-1: D8 Door Hardware Exploded View



ITEM	PART NUM.	QTY	DESCRIPTION
1	T-600024	1	LATCH CAM W/ 1/2" INSERT
2	T-600025	2	LATCH CAM W/ 1/4" INSERT
3	T-600027	1	SIDE ACTUATOR PLATE ASSEMBLY
4	T-600028	1	REVERSE ACTUATOR PLATE ASSEMBLY
5	T-600029	1	HANDLE ACTUATOR ASSEMBLY
6	T-600047	1	V1 DETENT ROD ASSEMBLY
7	T-600049	1	V1 DUST COVER WELDED ASM
8	T-4702AB	1	DOOR PLUNGER SWITCH
9	T-700007	3	LATCH BOLT
10	T-700009	1	TOP ACTUATOR PLATE
11	T-700012	1	ACTUATOR LINK PLATE
12	T-700028	1	DETENT PLATE
13	T-700218	1	BEZZLE GASKET RETAINER
14	T-800112	3	5/16" X 3/8 SHOULDER BOLT
15	T-800113	1	7/16 ID X 5/8 OD X 3/4 LG OILITE BUSHING
16	T-800152	1	7/16 EXTERNAL RETAINING RING
17	T-800153	1	T HANDLE
18	T-800175	3	#8 PLAIN WASHER "7/16 OD"
19	T-800182	8	#10-32THD BUT HD SOCK CAP SCR 5/16 LG
20	T-800184	1	7/16 WAVE WASHER (NOT SHOWN)
21	T-800186	1	DOOR RELATCH TORSION SPRING (NOT SHOWN)
22	T-800218	1	COMPRESSION SPRING (NOT SHOWN)
23	T-800234	4	#8-32THD PH PN HD SCR 1/4 LG
24	T-800312	1	VALIDATOR BEZZLE GASKET
25	T-6030022	3	1/4-20thd LOCK SCREW 1-5/16"
26	T-15016000	1	ELECTRONIC LOCK

Figure 10-2: V1 Door Hardware Exploded View

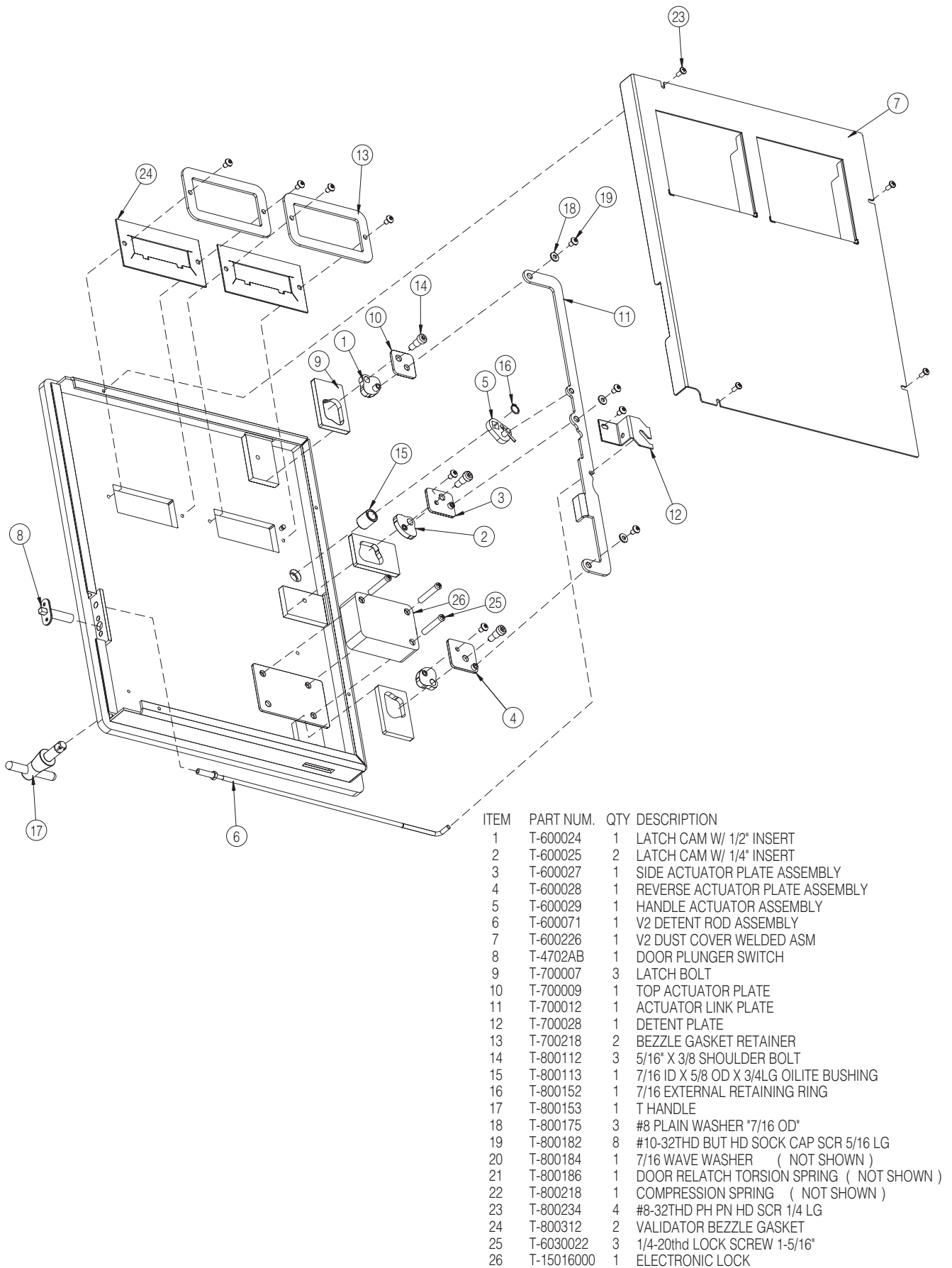
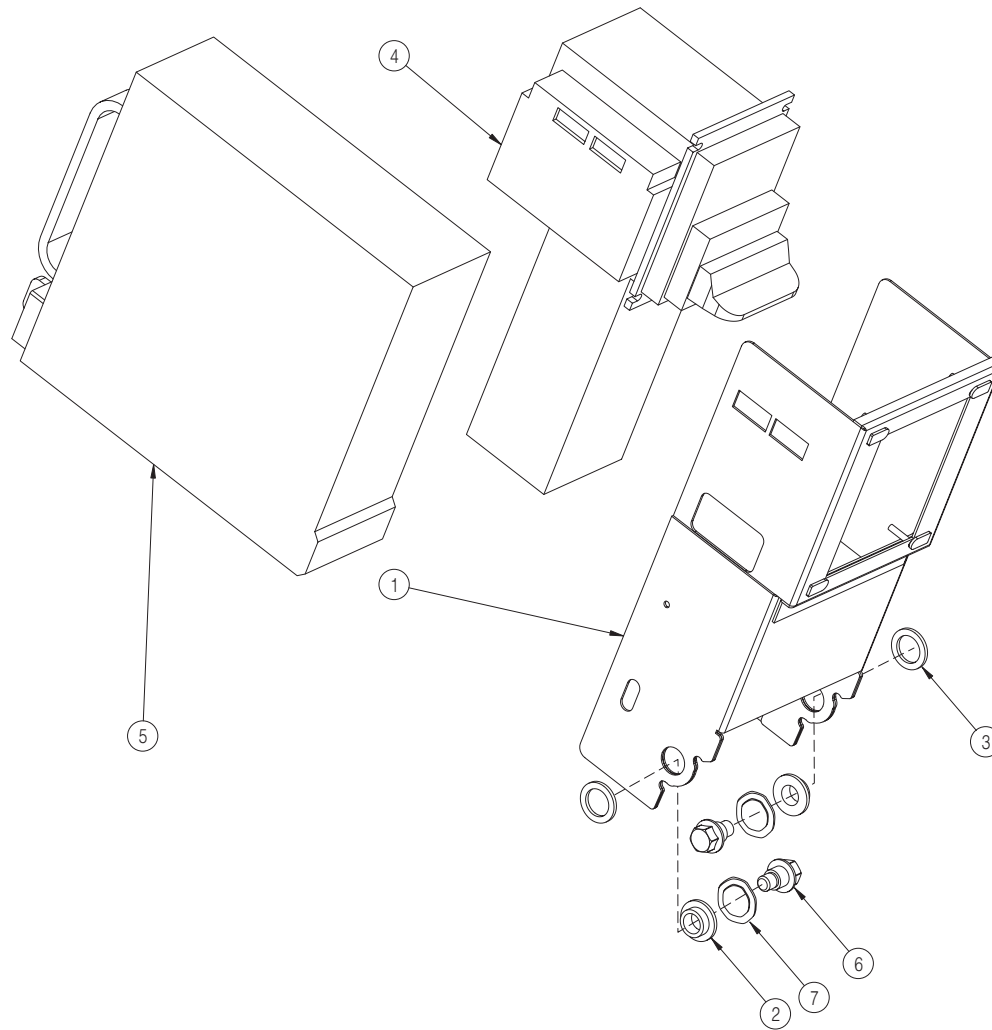
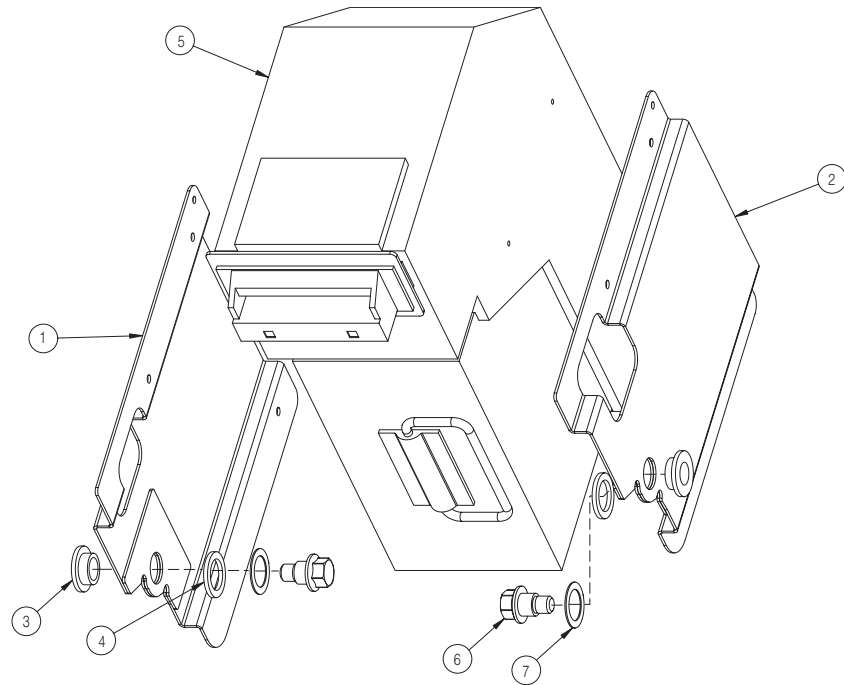


Figure 10-3: V2 Door Hardware Exploded View



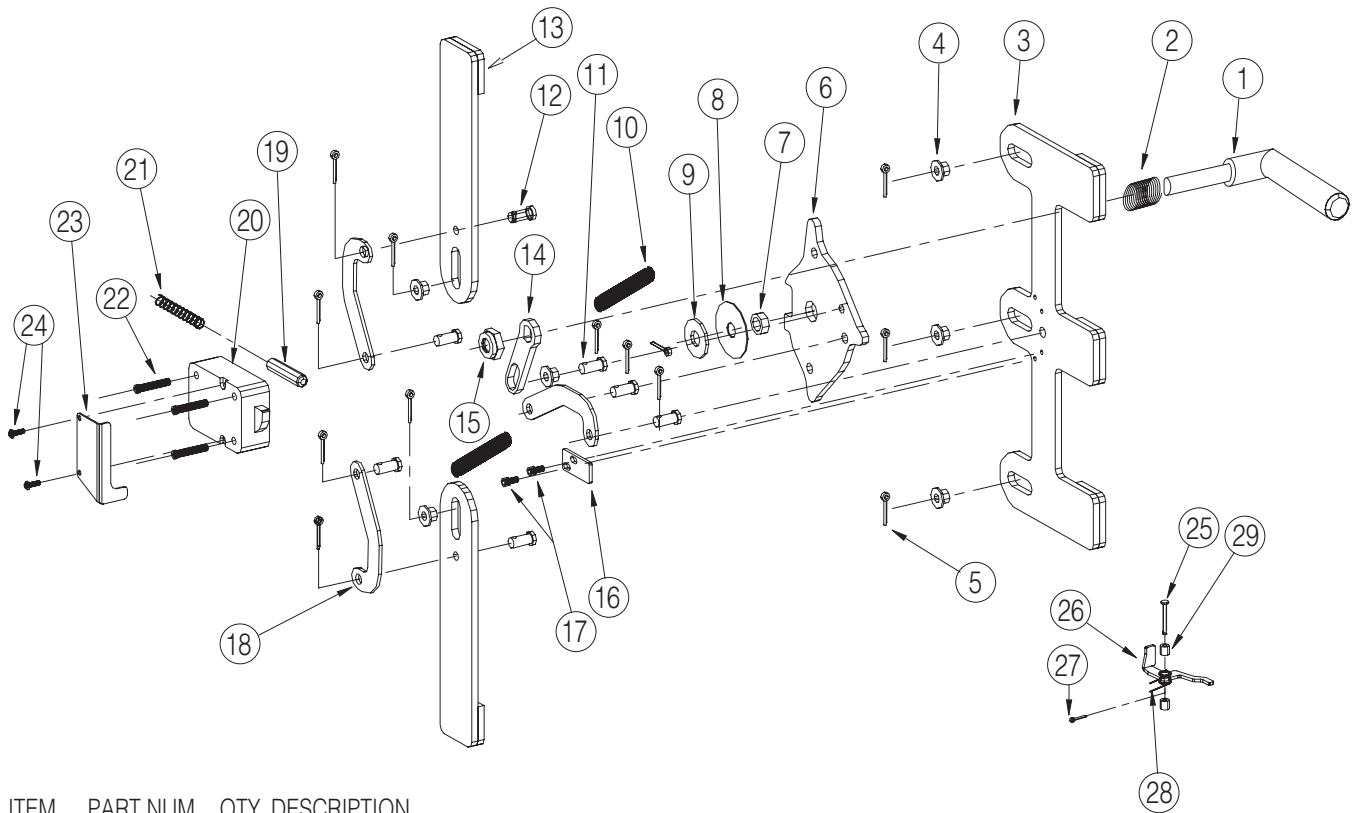
ITEM	PART NUM.	QTY	DESCRIPTION
1	T-600015	1	MARS BRACKET ASSEMBLY
2	T-800110	2	1/2 ID NYLON BUSHING
3	T-800146	2	11/16 ID NYLON WASHER
4	T-15072400	1	MARS VALIDATOR
5a	T-15073200	1	LOCKING CASSETTE, 1200
5b	T-15073500	1	NON-LOCKING CASSETTE, 1200 (OPTIONAL)
6	T-800313	2	SHOULDER BOLT
7	T-800185	2	WAVE WASHER
8	T-800174	4	HEX NUT, MOUNTING VALIDATOR (NOT SHOWN)

Figure 10-4: MARS Validator Mounting



ITEM	PART NUM.	QTY	DESCRIPTION
1	T-600038	1	JCM LEFT BRACKET ASSEMBLY
2	T-600039	1	JCM RIGHT BRACKET ASSEMBLY
3	T-800110	2	1/2 ID NYLON BUSHING
4	T-800146	2	11/16 ID NYLON WASHER
5	T-15074101	1	JCM VALIDATOR (CONTACT NKL FOR INTERNATIONAL)
6	T-800313	2	SHOULDER BOLT
7	T-800185	2	WAVE WASHER
8	T-800128	4	SCREW M4 X 6, MOUNTING (NOT SHOWN)

Figure 10-5: JCM Validator Mounting



ITEM	PART NUM.	QTY	DESCRIPTION
1	T-10000058	1	PREMIUM HANDLE ASSEMBLY
2	T-06500004	1	7/8 X 3/4 X .094 HANDLE SPRING
3	T-10000134	1	E-BAR ASSEMBLY
4	T-06041006	6	BRASS BUSHING
5	T-06151001	13	3/4 X 7/64 COTTER PIN
6	T-10000001	1	LOCKING CAM
7	T-06041007	1	1/2 ID NYLON BUSHING (HANDLE)
8	T-06020008	1	2 OD X 1/2 ID CAM WASHER
9	T-06020001	1	1 3/8 OD X 1/2 ID CAM WASHER
10	T-06500002	2	CAM SPRING
11	T-06141002	1	5/16 X 7/8 CLEVIS PIN (HANDLE LINK)
12	T-06141001	6	3/8 X 3/4 CLEVIS PIN (BOLT LINK)
13a	T-10030006	2	VERTICAL BOLT: 29" SAFE
13b	T-10030006	2	VERTICAL BOLT: 32" SAFE
13c	T-10030006	2	VERTICAL BOLT: 41" SAFE
13d	T-10030006	2	VERTICAL BOLT: 47" SAFE
14	T-10000003	1	HANDLE LINKAGE
15	T-06091006	1	5/8-11 SELF LOCKING JAM HEX NUT
16	T-10000006	1	DETENT STOP
17	T-06141004	2	10-32 X 3/8 SHCS
18	T-10000019	3	BOLT LINK
19	T-10000138	1	RELOCKER PIN
20	T-15016000	1	PRIMARY LOCK
21	T-06500006	1	RELOCKER SPRING
22	T-06030022	3	1/4-20 X 1 1/4 LOCK MOUNT SCREW
23	T-10000002	1	RELOCKER BRACKET
24	T-06030007	2	8-32 X 1/2 PH PNHD SCREW, RELOCKER
25	T-06141004	1	3/16 X 1 3/8 CLEVIS PIN
26	T-06041001	3	3/8 OD X 3/16 ID NYLON BUSHING
27	T-10000004	1	DETENT
28	T-06151002	2	1/2 X 3/32 DETENT COTTER PIN
29	T-06131002	2	6-32 KEPS NUT

Figure 10-6: BSM/BSD (AX) Door Hardware Exploded View

11 PARTS

D8C SAFE

The D8C safe replacement parts include the electronics can, vend assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-15059000	Outer Display Board
T-1505A010	D8C Inner Electronics Assembly (Can) for single door safes. <i>For electronic contents of can refer to Figure 9-2.</i>
T-1505B010	D8CI Inner Electronics Assembly (Can) for safes with an inner compartment. <i>For electronic contents of can refer to Figure 9-4.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15053000	Vend Assembly (Specify Model)
T-15053100 ²	Vend Main Board
T-15053200 ²	Vend Motor Board
T-15053300 ²	Drop Sensor (Hinge Side)
T-15053400 ²	Drop Sensor (Open Side)
T-15053600 ²	Vend Ribbon Cable
T-15003006 ²	Vend Motor (4 per assembly)
T-800130 ²	Vend Motor Gear (4 per assembly)
T-800135 ²	Vend Assembly Plastic Chassis
T-15052504	Armor Cable Harness Can to Vend
T-15054100	Inner Door Knob Lock (safes with inner door)
T-15009070	Cable: Inner Lock Harness (safes with inner door)
T-15054014	Inner Door Sensor (safes with inner door)
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054000	Lock Board (Outer Door)
T-15009084	Cable: Lock Board J3 to Outer Door Lock
T-15009080	Cable: Lock Board J1 to Vend Board
T-15054015	Outer Door Sensor

Note 1: Part of T-1505A010 or T-1505B010 Assembly.

Note 2: Part of T-15053000 Assembly.

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam (3)
T-600027	Side Actuator Plate (2)
T-600028	Reverse (bottom) Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700041	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (7)
T-800184	Wave Washer, 7/16

<u>PART</u>	<u>DESCRIPTION</u>
T-800186	Detent Spring
T-700028	Detent Bracket
T-600048	Detent Rod Assembly, D8
T-700032 ³	Detent Rod, D8
T-800211 ³	Adjustment Sleeve Stand-Off
HN700 ³	Adjustment Hex Locking Nut, 8-32
T-600030	Door Hinge Assembly, 1 x 3 1/2 (2)
T-700039T ⁴	Hinge Body Top
T-700039B ⁴	Hinge Body Bottom
T-800149 ⁴	Hinge Pin
T-800151 ⁴	Ball Bearing
T-800176 ⁴	Set Screw 1/2 x 20 x 1/2
T-800150 ⁴	Brass Bushing
T-16000002	Tube Lock Plate
T-600113	Tube Lock Actuator Cam
T-7034	Tube Lock Key Switch
T-800254	D8 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 for Cover
T-800328	Screw, 5/16 - 18 Thread Socket Head 7/8 (4) for Vend Assembly Mounting
T-600064	Manual Drop Drawer, 3 x 4.5 x 8

Note 3: Part of T-600048 Assembly.

Note 4: Part of T-600030 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-800208	D8 Label 1/2 x 3 7/8
T-800268	Autobank Label 3.5 x 14.25
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-600131	Replacement Tubes
T-16000039	Magnetic Tube Rack
T-BT-1189	Dipstick
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15099995	Serial Printer
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-600133	Dallas Electronic Key

D8R SAFE

The D8R safe replacement parts include the electronics can, vend assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-1505A012	D8R Inner Electronics Assembly (Can) for single door safes. <i>For electronic contents of can refer to Figure 9-6.</i>
T-1505B012	D8RI Inner Electronics Assembly (Can) for safes with an inner compartment. <i>For electronic contents of can refer to Figure 9-8.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15052502	Armor Cable Harness Can to Vend
T-4720	Medeco Keyswitch (D8R Fire Switch, Standard)
T-800198	Push Button (D8R Fire Switch, Optional)
T-15053000	Vend Assembly (Specify Model)
T-15053100 ²	Vend Main Board
T-15053200 ²	Vend Motor Board
T-15053300 ²	Drop Sensor (Hinge Side)
T-15053400 ²	Drop Sensor (Open Side)
T-15053600 ²	Vend Ribbon Cable
T-15003006 ²	Vend Motor (4 per assembly)
T-800130 ²	Vend Motor Gear (4 per assembly)
T-800135 ²	Vend Assembly Plastic Chassis
T-15054100	Inner Door Knob Lock (safes with inner door)
T-15009070	Cable: Inner Lock Harness (safes with inner door)
T-15054014	Inner Door Sensor (safes with inner door)
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054000	Lock Board (Outer Door)
T-15009084	Cable: Lock Board J3 to Outer Door Lock
T-15009080	Cable: Lock Board J1 to Vend Board
T-15054013	Outer Door Sensor
T-15054024	Cable: Outer Door Sensor and Armor Connection

Note 1: Part of T-1505A012 or T-1505B012 Assembly.

Note 2: Part of T-15053000 Assembly.

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam (3)
T-600027	Side Actuator Plate (2)
T-600028	Reverse (bottom) Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700041	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (7)
T-800184	Wave Washer, 7/16

<u>PART</u>	<u>DESCRIPTION</u>
T-800186	Detent Spring
T-700028	Detent Bracket
T-600048	Detent Rod Assembly, D8
T-700032 ³	Detent Rod, D8
T-800211 ³	Adjustment Sleeve Stand-Off
HN700 ³	Adjustment Hex Locking Nut, 8-32
T-600030	Door Hinge Assembly, 1 x 3 1/2 (2)
T-700039T ⁴	Hinge Body Top
T-700039B ⁴	Hinge Body Bottom
T-800149 ⁴	Hinge Pin
T-800151 ⁴	Ball Bearing
T-800176 ⁴	Set Screw 1/2 x 20 x 1/2
T-800150 ⁴	Brass Bushing
T-16000002	Tube Lock Plate
T-600113	Tube Lock Actuator Cam
T-7034	Tube Lock Key Switch
T-800254	D8 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 for Cover
T-800328	Screw, 5/16 - 18 Thread Socket Head 7/8 (4) for Vend Assembly Mounting
T-600064	Manual Drop Drawer, 3 x 4.5 x 8

Note 3: Part of T-600048 Assembly.

Note 4: Part of T-600030 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-800208	D8 Label 1/2 x 3 7/8
T-800268	Autobank Label 3.5 x 14.25
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-600131	Replacement Tubes
T-16000039	Magnetic Tube Rack
T-BT-1189	Dipstick
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply

D8X SAFE

The D8X safe replacement parts include the electronics can, vend assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-15059000	Outer Display Board
T-1505A011	D8X Inner Electronics Assembly (Can)
T-15052510 ¹	Cable: Power Harness
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15052505	Armor Cable Harness Can to Vend
T-15053000	Vend Assembly (Specify Model)
T-15053100 ²	Vend Main Board
T-15053200 ²	Vend Motor Board
T-15053300 ²	Drop Sensor (Hinge Side)
T-15053400 ²	Drop Sensor (Open Side)
T-15053600 ²	Vend Ribbon Cable
T-15003006 ²	Vend Motor (4 per assembly)
T-800130 ²	Vend Motor Gear (4 per assembly)
T-800135 ²	Vend Assembly Plastic Chassis
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054000	Lock Board (Outer Door)
T-15009084	Cable: Lock Board J3 to Outer Door Lock
T-15009080	Cable: Lock Board J1 to Vend Board
T-15054015	Outer Door Sensor
T-4720	Medeco Keyswitch (ACO)
T-15097035	Medeco Keyed Alike Pair (MGR and Tube Lock)
T-800316	On-Standby Keyswitch

Note 1: Part of T-1505A011 Assembly.

Note 2: Part of T-15053000 Assembly.

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam (3)
T-600027	Side Actuator Plate (2)
T-600028	Reverse (bottom) Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700041	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (7)
T-800184	Wave Washer, 7/16

<u>PART</u>	<u>DESCRIPTION</u>
T-800186	Detent Spring
T-700028	Detent Bracket
T-600048	Detent Rod Assembly, D8
T-700032 ³	Detent Rod, D8
T-800211 ³	Adjustment Sleeve Stand-Off
HN700 ³	Adjustment Hex Locking Nut, 8-32
T-600030	Door Hinge Assembly, 1 x 3 1/2 (2)
T-700039T ⁴	Hinge Body Top
T-700039B ⁴	Hinge Body Bottom
T-800149 ⁴	Hinge Pin
T-800151 ⁴	Ball Bearing
T-800176 ⁴	Set Screw 1/2 x 20 x 1/2
T-800150 ⁴	Brass Bushing
T-16000002	Tube Lock Plate
T-600113	Tube Lock Actuator Cam
T-7034	Tube Lock Key Switch
T-800254	D8 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 <i>for Cover</i>
T-800328	Screw, 5/16 - 18 Thread Socket Head 7/8 (4) <i>for Vend Assembly Mounting</i>
T-600064	Manual Drop Drawer, 3 x 4.5 x 8
T-6101001	Inner Door Lock (specify key type)

Note 3: Part of T-600048 Assembly.

Note 4: Part of T-600030 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800338	D8X Operator's Manual
T-800346	Installation Instructions
T-800208	D8 Label 1/2 x 3 7/8
T-800268	Autobank Label 3.5 x 14.25
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-600131	Replacement Tubes
T-16000039	Magnetic Tube Rack
T-BT-1189	Dipstick
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply

V1C SAFE

The V1C safe replacement parts include the electronics can, validator assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-1505AM15	V1C Inner Electronics Assembly (MARS) <i>For electronic contents of can refer to Figure 9-12.</i>
T-1505AJ15	V1C Inner Electronics Assembly (JCM) <i>For electronic contents of can refer to Figure 9-12.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15057202	Armor Cable: Can to MARS Validator
T-15057214	Armor Cable: Can to JCM Validator
T-15052503	Armor Cable: Can to Outer Door Lock
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054013	Outer Door Sensor

Note 1: Part of T-1505AM15 or T-1505AJ15 Assemblies.

MARS VALIDATOR COMPONENTS & HARDWARE

<u>PART</u>	<u>DESCRIPTION</u>
T-15072100	Mars Validator 3800, Non-Locking
T-15072400	Mars Validator 3900, Locking
T-15072200	Mars 3800 Bill Cassette, Non-Locking
T-15073200	Mars 3900 Bill Cassette, Locking
T-600015	Mounting Plate
T-800174	Hex Nut, #10-24, Validator Mounting (4)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

JCM VALIDATOR COMPONENTS & HARDWARE

<u>PART</u>	<u>DESCRIPTION</u>
T-15074100	JCM Canister, WBA1000BOX
T-15074101	JCM Validator WBA1000, USA
T-15074102	JCM Validator WBA1000, UK
T-15074103	JCM Validator WBA1000, Sweeden
T-600038	Left Mounting Plate
T-600039	Right Mounting Plate
T-800128	Screw, M4 x 6, Validator Mounting (6)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam, 1/4 Insert (2)
T-600024	Latch Bolt Cam, 1/2 Insert (1)

<u>PART</u>	<u>DESCRIPTION</u>
T-700009	Actuator Plate
T-600027	Side Actuator Plate
T-600028	Reverse Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700012	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (8)
T-800184	Wave Washer, 7/16
T-800186	Detent Spring
T-700028	Detent Bracket
T-600047	Detent Rod Assembly, V1
T-700027 ²	Detent Rod, V1
T-800211 ²	Adjustment Sleeve Stand-Off
HN700 ²	Adjustment Hex Locking Nut, 8-32
T-600011	Door Hinge Assembly, 7/8 x 2 1/2 (2)
T-700014T ³	Hinge Body Top
T-700014B ³	Hinge Body Bottom
T-800092 ³	Hinge Pin
T-800093 ³	Ball Bearing
T-800094 ³	Set Screw
T-800095 ³	Brass Bushing
T-800312	Validator Bezel Gasket
T-700218	Validator Bezel Gasket Retainer
T-600049	V1 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 for Cover

Note 2: Part of T-600047 Assembly.

Note 3: Part of T-600011 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-800209	V1 Label 1/2 x 3 7/8
T-800269	Autobank Label 3.5 x 8.5
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15099995	Serial Printer
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-15000206	Validator Aux Power Supply MARS
T-15000236	Validator Aux Power Supply JCM
T-600133	Dallas Electronic Key

V1R SAFE

The V1R safe replacement parts include the electronics can, validator assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-1505AM13	V1C Inner Electronics Assembly (MARS) <i>For electronic contents of can refer to Figure 9-14.</i>
T-1505AJ13	V1C Inner Electronics Assembly (JCM) <i>For electronic contents of can refer to Figure 9-14.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15057202	Armor Cable: Can to MARS Validator
T-15057214	Armor Cable: Can to JCM Validator
T-15052503	Armor Cable: Can to Outer Door Lock
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054013	Outer Door Sensor
T-800198	Push Button (Fire Switch, Button)
T-4720	Medeco KeySw. (Fire Switch, Keyed)

Note 1: Part of T-1505AM13 or T-1505AJ13 Assemblies.

MARS VALIDATOR COMPONENTS & HARDWARE

<u>PART</u>	<u>DESCRIPTION</u>
T-15072100	Mars Validator 3800, Non-Locking
T-15072400	Mars Validator 3900, Locking
T-15072200	Mars 3800 Bill Cassette, Non-Locking
T-15073200	Mars 3900 Bill Cassette, Locking
T-600015	Mounting Plate
T-800174	Hex Nut, #10-24, Validator Mounting (4)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

JCM VALIDATOR COMPONENTS & HARDWARE

<u>PART</u>	<u>DESCRIPTION</u>
T-15074100	JCM Canister, WBA1000BOX
T-15074101	JCM Validator WBA1000, USA
T-15074102	JCM Validator WBA1000, UK
T-15074103	JCM Validator WBA1000, Sweeden
T-600038	Left Mounting Plate
T-600039	Right Mounting Plate
T-800128	Screw, M4 x 6, Validator Mounting (6)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam, 1/4 Insert (2)
T-600024	Latch Bolt Cam, 1/2 Insert (1)
T-700009	Actuator Plate
T-600027	Side Actuator Plate
T-600028	Reverse Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700012	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (8)
T-800184	Wave Washer, 7/16
T-800186	Detent Spring
T-700028	Detent Bracket
T-600047	Detent Rod Assembly, V1
T-700027 ²	Detent Rod, V1
T-800211 ²	Adjustment Sleeve Stand-Off
HN700 ²	Adjustment Hex Locking Nut, 8-32
T-600011	Door Hinge Assembly, 7/8 x 2 1/2 (2)
T-700014T ³	Hinge Body Top
T-700014B ³	Hinge Body Bottom
T-800092 ³	Hinge Pin
T-800093 ³	Ball Bearing
T-800094 ³	Set Screw
T-800095 ³	Brass Bushing
T-800312	Validator Bezel Gasket
T-700218	Validator Bezel Gasket Retainer
T-600049	V1 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 for Cover

Note 2: Part of T-600047 Assembly.

Note 3: Part of T-600011 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-800209	V1 Label 1/2 x 3 7/8
T-800269	Autobank Label 3.5 x 8.5
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-15000206	Validator Aux Power Supply MARS
T-15000236	Validator Aux Power Supply JCM
T-600133	Dallas Electronic Key

V2C SAFE

The V2C safe replacement parts include the electronics can, validator assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-1505AM16	V1C Inner Electronics Assembly (MARS) <i>For electronic contents of can refer to Figure 9-16.</i>
T-1505AJ16	V1C Inner Electronics Assembly (JCM) <i>For electronic contents of can refer to Figure 9-16.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15057202	Armor Cable: Can to MARS Validator (2)
T-15057214	Armor Cable: Can to JCM Validator (2)
T-15052503	Armor Cable: Can to Outer Door Lock
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054013	Outer Door Sensor

Note 1: Part of T-1505AM16 or T-1505AJ16 Assemblies.

MARS VALIDATOR COMPONENTS & HARDWARE (2 SETS)

<u>PART</u>	<u>DESCRIPTION</u>
T-15072100	Mars Validator 3800, Non-Locking
T-15072400	Mars Validator 3900, Locking
T-15072200	Mars 3800 Bill Cassette, Non-Locking
T-15073200	Mars 3900 Bill Cassette, Locking
T-600015	Mounting Plate
T-800174	Hex Nut, #10-24, Validator Mounting (4)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

JCM VALIDATOR COMPONENTS & HARDWARE (2 SETS)

<u>PART</u>	<u>DESCRIPTION</u>
T-15074100	JCM Canister, WBA1000BOX
T-15074101	JCM Validator WBA1000, USA
T-15074102	JCM Validator WBA1000, UK
T-15074103	JCM Validator WBA1000, Sweeden
T-600038	Left Mounting Plate
T-600039	Right Mounting Plate
T-800128	Screw, M4 x 6, Validator Mounting (6)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam, 1/4 Insert (2)
T-600024	Latch Bolt Cam, 1/2 Insert (1)

<u>PART</u>	<u>DESCRIPTION</u>
T-700009	Actuator Plate
T-600027	Side Actuator Plate
T-600028	Reverse Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700012	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (8)
T-800184	Wave Washer, 7/16
T-800186	Detent Spring
T-700028	Detent Bracket
T-600071	Detent Rod Assembly, V2
T-700103 ²	Detent Rod, V2
T-800211 ²	Adjustment Sleeve Stand-Off
HN700 ²	Adjustment Hex Locking Nut, 8-32
T-600030	Door Hinge Assembly, 1 x 3 1/2 (2)
T-700039T ³	Hinge Body Top
T-700039B ³	Hinge Body Bottom
T-800149 ³	Hinge Pin
T-800151 ³	Ball Bearing
T-800176 ³	Set Screw 1/2 x 20 x 1/2
T-800150 ³	Brass Bushing
T-800312	Validator Bezel Gasket (2)
T-700218	Validator Bezel Gasket Retainer (2)
T-600226	V2 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 for Cover

Note 2: Part of T-600071 Assembly.

Note 3: Part of T-600030 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-800207	V2 Label 1/2 x 3 7/8
T-800269	Autobank Label 3.5 x 8.5
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15099995	Serial Printer
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-15000206	Validator Aux Power Supply MARS
T-15000236	Validator Aux Power Supply JCM
T-600133	Dallas Electronic Key

V2R SAFE

The V2R safe replacement parts include the electronics can, validator assembly, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-1505AM14	V1C Inner Electronics Assembly (MARS) <i>For electronic contents of can refer to Figure 9-18.</i>
T-1505AJ14	V1C Inner Electronics Assembly (JCM) <i>For electronic contents of can refer to Figure 9-18.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15057202	Armor Cable: Can to MARS Validator (2)
T-15057214	Armor Cable: Can to JCM Validator (2)
T-15052503	Armor Cable: Can to Outer Door Lock
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054013	Outer Door Sensor
T-800198	Push Button (Fire Switch, Button)
T-4720	Medeco KeySw. (Fire Switch, Keyed)
T-15054012	Cable: Fire Button/Keyswitch

Note 1: Part of T-1505AM14 or T-1505AJ14 Assemblies.

MARS VALIDATOR COMPONENTS & HARDWARE (2 SETS)

T-15072100	Mars Validator 3800, Non-Locking
T-15072400	Mars Validator 3900, Locking
T-15072200	Mars 3800 Bill Cassette, Non-Locking
T-15073200	Mars 3900 Bill Cassette, Locking
T-600015	Mounting Plate
T-800174	Hex Nut, #10-24, Validator Mounting (4)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

JCM VALIDATOR COMPONENTS & HARDWARE (2 SETS)

T-15074100	JCM Canister, WBA1000BOX
T-15074101	JCM Validator WBA1000, USA
T-15074102	JCM Validator WBA1000, UK
T-15074103	JCM Validator WBA1000, Sweeden
T-600038	Left Mounting Plate
T-600039	Right Mounting Plate
T-800128	Screw, M4 x 6, Validator Mounting (6)
T-800110	Nylon Flange Bushing (2)
T-800146	Nylon Flange Washer (2)
T-800185	Wave Washer (2)
T-800313	Shoulder Bolt, 1/2 x 3/8 with 3/4 Hex Head (2)

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-800153	"T" Handle
T-800113	Handle Bushing
T-700007	Latch Bolt (3)
T-600025	Latch Bolt Cam, 1/4 Insert (2)
T-600024	Latch Bolt Cam, 1/2 Insert (1)
T-700009	Actuator Plate

T-600027	Side Actuator Plate
T-600028	Reverse Actuator Plate
T-600029	Handle Actuator Plate
T-800218	Main Spring
T-700012	Actuator Link Plate (Connecting Bar)
T-800112	Shoulder Bolt 5/16 x 3/8 (3)
T-800129	Retaining Clip, Type E, 3/16 (Detent Rod)
T-800152	External Retaining 7/16 (Handle)
T-800175	Washer, #8, 7/16 OD (3)
T-800182	Screw, #10-32 Button Head Cap 5/16 (8)
T-800184	Wave Washer, 7/16
T-800186	Detent Spring
T-700028	Detent Bracket
T-600071	Detent Rod Assembly, V2
T-700103 ²	Detent Rod, V2
T-800211 ²	Adjustment Sleeve Stand-Off
HN700 ²	Adjustment Hex Locking Nut, 8-32
T-600030	Door Hinge Assembly, 1 x 3 1/2 (2)
T-700039T ³	Hinge Body Top
T-700039B ³	Hinge Body Bottom
T-800149 ³	Hinge Pin
T-800151 ³	Ball Bearing
T-800176 ³	Set Screw 1/2 x 20 x 1/2
T-800150 ³	Brass Bushing
T-800312	Validator Bezel Gasket (2)
T-700218	Validator Bezel Gasket Retainer (2)
T-600226	V2 Dust Cover
T-800234	Screws, #8-32 Phillips 1/4 for Cover

Note 2: Part of T-600071 Assembly.

Note 3: Part of T-600030 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-800207	V2 Label 1/2 x 3 7/8
T-800269	Autobank Label 3.5 x 8.5
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-15000206	Validator Aux Power Supply MARS
T-15000236	Validator Aux Power Supply JCM
T-600133	Dallas Electronic Key

AXC SAFE

The AXC safe replacement parts include the electronics can, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

<u>PART</u>	<u>DESCRIPTION</u>
T-15059000	Outer Display Board
T-1505A017	AXC Inner Electronics Assembly (Can, 1 Door) <i>For electronic contents of can refer to Figure 9-20.</i>
T-1505B017	AXC Inner Electronics Assembly (Can, 2 Door) <i>For electronic contents of can refer to Figure 9-22.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15052503	Armor Cable Harness
T-15054100	Inner Door Knob Lock (safes with inner door)
T-15009070	Cable: Inner Lock Harness (safes with inner door)
T-15054014	Inner Door Sensor (safes with inner door)
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054013	Outer Door Sensor

Note 1: Part of T-1505A017 or T-1505B017 Assembly.

MECHANICAL

<u>PART</u>	<u>DESCRIPTION</u>
T-600064	Manual Drop Drawer, 3 x 4.5 x 8
T-10030001	292020 RS Dust Cover
T-10020001	322020 RS Dust Cover
T-10010001	412626 RS Dust Cover
T-10080009	472526 RS Dust Cover
T-10010001L	412626 LS Dust Cover
T-10080009L	472526 LS Dust Cover
T-06020006	Washer (qty 4, each cover)
T-06035001	Torx Bit (qty 4, each cover)
T-600080	Boltworks Cam Assembly
T-10000001 ²	Y-Cam for 5-Point Boltwork
T-06020008 ²	Cam Washer, Inner
T-06020001 ²	Cam Washer, Outer
T-06500002 ²	Cam Spring (qty 2)
T-06141001 ²	Clevis Pin, Bolt Linkage (qty 6)
T-600081	Boltworks E-Bar Assembly
T-10000134 ³	E-Bar Assembly
T-06041006 ³	Bushing, Brash (qty 6)
T-06151001 ³	Cotter Pin (qty 13)
T-10000141	Vertical Bolt Assembly
T-10030006	292020 Vertical Bolt (qty 2)
T-10020006	322020 Vertical Bolt (qty 2)
T-10010010	412626 Vertical Bolt (qty 2)
T-10080010	472526 Vertical Bolt (qty 2)
T-600082	Detent Assembly
T-06041004 ⁴	Bushing, Nylon (qty 2)
T-06500003 ⁴	Torsion Spring (1/2 x 7/16 x .038)
T-10000004 ⁴	Detent Arm, 5-Point
T-06151002 ⁴	Cotter Pin
T-10000006 ⁴	Detent Stop
T-06141004 ⁴	Screw, 10-32 x 3/8

<u>PART</u>	<u>DESCRIPTION</u>
T-600083	Relocker Assembly
T-10000138 ⁵	Relocker Pin
T-06500006 ⁵	Relocker Spring
T-10000002 ⁵	Relocker Bracket (RS)
T-10000021 ⁵	Relocker Bracket (LS)
T-06030007 ⁵	Relocker Screws, 8-32 x 1/2
T-600085	Door Closure Assembly
T-06500005 ⁶	Door Closure Spring
T-10000052 ⁶	Door Closure Tube
T-08001003 ⁶	Door Closure Tip (plastic)
T-600086	Door Switch Assembly
T-10000089 ⁷	Door Switch Bracket
T-06030011 ⁷	Screw, Pan Machine 6-32 (qty 2)
T-06010006 ⁷	Screw, 1/4 x 20 x 3/8
T-15000023 ⁷	Door Switch
T-06131002 ⁷	Keps Nuts 6-32
T-600084	Hinge Assembly (qty 2)
T-10000151 ⁸	Hinge Shim
T-10000027 ⁸	Hinge Knuckle (RS)
T-10000027L ⁸	Hinge Knuckle (LS)
T-06071006 ⁸	Hinge Pin Dowel
T-06010001 ⁸	Screw, 5/16 x 18 x 1 1/4 (qty 4 per hinge)
T-06061006 ⁸	Set Screw, 5/16 x 18 x 3/4
T-06061005 ⁸	Set Screw, 3/8 x 16 x 1/4 (qty 2 per hinge)

Note 2: Part of T-600080 Assembly.

Note 3: Part of T-600081 Assembly.

Note 4: Part of T-600082 Assembly.

Note 5: Part of T-600083 Assembly.

Note 6: Part of T-600085 Assembly.

Note 7: Part of T-600086 Assembly.

Note 8: Part of T-600084 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-80020	Intellisafe Label 1/2 x 3 7/8
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15099995	Serial Printer
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-600133	Dallas Electronic Key

AXR SAFE

The AXR safe replacement parts include the electronics can, lock components and sensors, and various mechanical parts. For part location, refer to Sections 9 and 10.

MAJOR ELECTRONIC PARTS

PART	DESCRIPTION
T-1505A0NZ	AXR Inner Electronics Assembly (Can, 1 Door) <i>For electronic contents of can refer to Figure 9-24.</i>
T-1505A0ZZ	AXRI Inner Electronics Assembly (Can, 2 Door) <i>For electronic contents of can refer to Figure 9-26.</i>
T-15000191 ¹	Modular Connector (11)
T-600089 ¹	Can Case
T-700209 ¹	Can Cover
T-700139 ¹	Can Connector Plate
T-15052503	Armor Cable Harness
T-15054100	Inner Door Knob Lock (safes with inner door)
T-15009070	Cable: Inner Lock Harness (safes with inner door)
T-15054014	Inner Door Sensor (safes with inner door)
T-15016000	Outer Door Lock, Universal Swingbolt
T-15054013	Outer Door Sensor
T-800198	Push Button (Fire Switch, Button)
T-4720	Medeco KeySw. (Fire Switch, Keyed)

Note 1: Part of T-1505A0NZ or T-1505A0ZZ Assembly.

MECHANICAL

PART	DESCRIPTION
T-600064	Manual Drop Drawer, 3 x 4.5 x 8
T-10030001	292020 RS Dust Cover
T-10020001	322020 RS Dust Cover
T-10010001	412626 RS Dust Cover
T-10080009	472526 RS Dust Cover
T-10010001L	412626 LS Dust Cover
T-10080009L	472526 LS Dust Cover
T-06020006	Washer (qty 4, each cover)
T-06035001	Torx Bit (qty 4, each cover)
T-600080	Boltworks Cam Assembly
T-10000001 ²	Y-Cam for 5-Point Boltwork
T-06020008 ²	Cam Washer, Inner
T-06020001 ²	Cam Washer, Outer
T-06500002 ²	Cam Spring (qty 2)
T-06141001 ²	Clevis Pin, Bolt Linkage (qty 6)
T-600081	Boltworks E-Bar Assembly
T-10000134 ³	E-Bar Assembly
T-06041006 ³	Bushing, Brash (qty 6)
T-06151001 ³	Cotter Pin (qty 13)
T-10000141	Vertical Bolt Assembly
T-10030006	292020 Vertical Bolt (qty 2)
T-10020006	322020 Vertical Bolt (qty 2)
T-10010010	412626 Vertical Bolt (qty 2)
T-10080010	472526 Vertical Bolt (qty 2)
T-600082	Detent Assembly
T-06041004 ⁴	Bushing, Nylon (qty 2)
T-06500003 ⁴	Torsion Spring (1/2 x 7/16 x .038)
T-10000004 ⁴	Detent Arm, 5-Point
T-06151002 ⁴	Cotter Pin
T-10000006 ⁴	Detent Stop
T-06141004 ⁴	Screw, 10-32 x 3/8

<u>PART</u>	<u>DESCRIPTION</u>
T-600083	Relocker Assembly
T-10000138 ⁵	Relocker Pin
T-06500006 ⁵	Relocker Spring
T-10000002 ⁵	Relocker Bracket (RS)
T-10000021 ⁵	Relocker Bracket (LS)
T-06030007 ⁵	Relocker Screws, 8-32 x 1/2
T-600085	Door Closure Assembly
T-06500005 ⁶	Door Closure Spring
T-10000052 ⁶	Door Closure Tube
T-08001003 ⁶	Door Closure Tip (plastic)
T-600086	Door Switch Assembly
T-10000089 ⁷	Door Switch Bracket
T-06030011 ⁷	Screw, Pan Machine 6-32 (qty 2)
T-06010006 ⁷	Screw, 1/4 x 20 x 3/8
T-15000023 ⁷	Door Switch
T-06131002 ⁷	Keps Nuts 6-32
T-600084	Hinge Assembly (qty 2)
T-10000151 ⁸	Hinge Shim
T-10000027 ⁸	Hinge Knuckle (RS)
T-10000027L ⁸	Hinge Knuckle (LS)
T-06071006 ⁸	Hinge Pin Dowel
T-06010001 ⁸	Screw, 5/16 x 18 x 1 1/4 (qty 4 per hinge)
T-06061006 ⁸	Set Screw, 5/16 x 18 x 3/4
T-06061005 ⁸	Set Screw, 3/8 x 16 x 1/4 (qty 2 per hinge)

Note 2: Part of T-600080 Assembly.

Note 3: Part of T-600081 Assembly.

Note 4: Part of T-600082 Assembly.

Note 5: Part of T-600083 Assembly.

Note 6: Part of T-600085 Assembly.

Note 7: Part of T-600086 Assembly.

Note 8: Part of T-600084 Assembly.

MISCELLANEOUS

<u>PART</u>	<u>DESCRIPTION</u>
T-800339	Operator's Manual
T-800346	Installation Instructions
T-80020	Intellisafe Label 1/2 x 3 7/8
T-800301	Label (Rear) 1 5/8 x 7 1/4
T-800372	Anchor Kit
T-15099995	Serial Printer
T-15009073	100 Foot Cat 5 Ext. Cable
T-15009074	75 Foot Cat. 5 Ext. Cable
T-15009075	50 Foot Cat. 5 Ext. Cable
T-15009076	25 Foot Cat. 5 Ext. Cable
T-15000217	Safe Power Supply 5V,±12V
T-800371	Uninterruptible Power Supply
T-600133	Dallas Electronic Key

EPR REMOTE DISPLAY

The EPR is available through distribution as well as through service. The EPR is replaced as a whole piece, part number T-15005018. It requires a 9 Vdc power supply (T-15000223).



Figure 11-1: XLV-EPR

APPENDIX A: REPORTS & RECEIPTS

OPERATOR REPORT

Name of report and person running report. _____

OPERATOR 08 REPORT
JOHN DOE

Activity Section: _____

Lists money totals of each type of transaction including all loads, vends, unloads, manual drops, validator drops, and buy change net drops. A total net cash amount shows the combined total.

TOTAL LOAD: \$680.50
TOTAL VEND: \$186.00
TOTAL MAN DROP: \$221.00
TOTAL VAL DROP: \$855.00
TOTAL BUY DROP: \$8.00
TOTAL UNLOAD: \$0.00
NET CASH: \$1562.50

The transaction number is the log entry number. _____
The site is the store number. Date and time stamps are also shown.

TRANS #00365 OPER 08 SITE #004026
TIME 07:41:20 08/18/01

END DAY REPORT

Name of report. _____

Grand Activity: _____

This section shows total system activity (combined sum of all operators). Note that when an End Day Grand Z report runs, all net transaction amounts are reset to zero and a new business day starts automatically.

END OF DAY REPORT

TOTAL LOAD: \$680.50
TOTAL VEND: \$186.00
TOTAL MAN DROP: \$221.00
TOTAL VAL DROP: \$855.00
TOTAL BUY DROP: \$8.00
TOTAL UNLOAD: \$0.00
NET CASH: \$1562.50

The End Day Report includes copies of Operator Reports for each operator. _____

A series of "Operator Reports" (one for each operator in the system who was active during the business day) appears next in the report.

The End Day Report includes a copy of the Cash Report. _____

A "Cash Report" prints next in the report

The transaction number is the log entry number. _____
The site is the store number. Date and time stamps are also shown.

TRANS #02366 OPER 46 SITE #004026
TIME 07:49:16 08/17/01

CASH REPORT

Name of report. _____

CASH REPORT

Vend Section: _____

Shows number of tubes and amount of money in each column, per vend assembly, then shows the total of all vend.

MAIN VEND

COLUMN 1	07 TUBES	\$3.50
COLUMN 2	09 TUBES	\$18.00
COLUMN 3	07 TUBES	\$35.00
COLUMN 4	06 TUBES	\$60.00
COLUMN 5	05 TUBES	\$50.00
COLUMN 6	08 TUBES	\$160.00
COLUMN 7	10 TUBES	\$200.00
COLUMN 8	06 TUBES	\$240.00
TOTAL LEFT IN VEND		\$766.50

Manual Drop Cash Section: _____

Shows the amount of money in each manual drop location, then shows total money in manual drops.

OFFICE MANUAL DROP \$172.00
TOTAL FOR: MANUAL DROPS \$172.00

Validator Drop Cash Section: _____

Shows the bill count for each validator, then shows total validated money.

DRIVE THRU VALIDATED DROPS:

\$1.00	0044
\$2.00	0000
\$5.00	0060
\$10.00	0051
\$20.00	0089
\$50.00	0008
\$100.00	0005
TOTAL FOR: VALIDATED DROPS \$3534	

The transaction number is the log entry number.
The site is the store number. Date and time stamps are also shown.

TRANS #02365 SITE #004026
TIME 08:41:33 09/18/01

AUDIT REPORT

Name of report. _____

Report Data Section: _____
Shows software name and version. Shows report start and end time/date, device, user, and event report criteria.

Entry 1:
00425 is the Transaction Number, then shows time and date stamps. New user Mike Smith is enrolled with permission defaults of a supervisor.

Entry 2:
Transaction 00426; Jay Doe starts the load procedure.

Entry 3:
Mike Smith vends a tube of nickels from the second column of Main Vend.

Entry 4:
Someone using Jane Doe's identifier attempted to log into the system, but the PIN was incorrect. Since the next entry is valid, the assumption is that Jane Doe simply made a mistake entering her PIN.

Entry 5: _____
Jane Doe makes a validated drop to the validator known as Drive Thru.

Entry 6: _____
Mike Smith ran a configuration report to check system parameters.

The transaction number is the log entry number. _____
The site is the store number. Date and time stamps are also shown.

AUDIT REPORT

REPORT DATA:

AUDITLOK XLV V1.00
START: 08:00 08/22/01
END: 09:00 08/22/01
DEVICE: ALL
USER: ALL
EVENT: ALL

00425 MANAGER 08:07:11 8/22/01
ENROLL USER MIKE SMITH
SUPERVISOR

00426 JAY DOE 08:12:15 8/22/01
LOAD
05 01 02 03 01 02 00 00 \$94.50

00427 MIKE SMITH 08:13:58 8/22/01
VEND \$2.00

00428 JANE DOE 08:27:43 8/22/01
BAD PIN

00429 JANE DOE 08:28:14 8/22/01
DROP: DRIVE THRU \$120.00

00430 MIKE SMITH 08:42:11 8/22/01
CONFIG REPORT

TRANS #00565 SITE #04026
TIME 11:28 DATE 09/02/00

ENROLLED USERS REPORT

Name of report. _____

Entries: _____

General information about each user is listed first. Following that is a list of groups (000 to 031) that the user has access to, then a list of the user's specific permissions. If a permission is not listed, then the user does not have that permission. Note that in the case of door and vend permissions, the user may only open doors or vend from columns that are members of the user's groups.

ENROLLED USERS REPORT

```

USER: 001
USERNAME: JOHN DOE
SSN: 123123123
STATUS: ACTIVE
LEVEL: SUPERVISOR
KEY: NONE
GROUPS
  000
  001
  002
  003
  004
  005
PERMISSIONS
  DOOR
  DROP
  VEND
  LOAD
  UNLOAD
  DROP SET DEL
  ENROLL USER
  DEL/EDIT USER
  PRINT AUDIT
  END DAY REPORT
  CASH REPORT
  USER REPORT
  PERMS REPORT
  CONFIG REPORT
  
```

This report continues through the complete list of all users enrolled in the system...

The transaction number is the log entry number. _____
 The site is the store number. Date and time stamps are also shown.

```

TRANS #00565   SITE #04026
TIME 11:28    DATE 09/02/00
  
```

CONFIGURATION REPORT

Name of report. _____

System Parameters Section: _____

The report will print an exhaustive list (this example shows a partial list) of system level parameters. Most items on the list are self-explanatory.

Device Parameters Section: _____

The report will print an exhaustive list (this example shows a partial list) of system devices, all components of each device, all variables of each component.

The transaction number is the log entry number.
The site is the store number. Date and time stamps are also shown.

CONFIGURATION REPORT

SYSTEM:

IDLE ABC COMPANY
SITE 04026
COMPANY 0999
MANUFACTURER 0999
PIN LENGTH 04
PIN LIFE 30 DAYS
AUTO INACTIVE 02 MO
AUTO DELETE 02 MO
PRINT RECEIPTS YYYY
DEPOSIT TRACKING Y
END DAY AUTOPRINT N
KEY REQUIRED N

VEND CONTROLLER 00000043CA20

MAIN VEND UNIT 00000035F08B

VEND

COLUMN #01 \$0.50 GROUP 00
COLUMN #02 \$2.00 GROUP 00
COLUMN #03 \$5.00 GROUP 00
COLUMN #04 \$10.00 GROUP 00
COLUMN #05 \$10.00 GROUP 00
COLUMN #06 \$20.00 GROUP 00
COLUMN #07 \$20.00 GROUP 00
COLUMN #08 \$40.00 GROUP 00
VEND DELAY 02
UNLOAD DELAY 05

OUTER DOOR 00000042DA6A

LOCK

DELAY 05
ACCESS 05
ALARM 05
FIRE TIME 01
GROUP 00
BEHIND NONE
SENSORS 2
TIMELOCK:
SUNDAY

UNL 00:00 LCK 00:00

UNL 00:00 LCK 00:00

Each day's timelocks are shown.

TRANS #00566 OPER 002 SITE #004026

TIME 14:07:00 09/06/01

DROP RECEIPT

Name of receipt. _____

Name of person making drop. _____

Validated Section: _____
Each validated denomination is listed, along with the quantity dropped.

Manual Section: _____
Each manual drop location is listed, along with the amount of the drop. _____

Total Drops Section: _____
This is the sum of all money dropped.

The transaction number is the log entry number. _____
The site is the store number. Date and time stamps are also shown.

DROP RECEIPT

JOHN DOE

\$1.00	0028
\$2.00	0000
\$5.00	0019
\$10.00	0016
\$20.00	0034
\$50.00	0007
\$100.00	0004
MANUAL DROP \$0.00	
TOTAL AMOUNT DROPPED \$1713.00	

TRANS #00086 OPER 06 SITE #004026
TIME 22:16:13 08/14/01

DEPOSIT RECEIPT

Name of receipt. _____

Type of the cash being removed. _____

Validator Section: _____
Each validator contributing to the cash is listed, along with a bill count of each denomination.

Total Deposit Section: _____
This is the sum of all money being removed.

The transaction number is the log entry number. _____
The site is the store number. Date and time stamps are also shown.

DEPOSIT REPORT

BOXCASH VALIDATED DROPS

\$1.00	0021
\$2.00	0000
\$5.00	0010
\$10.00	0018
\$20.00	0022
\$50.00	0004
\$100.00	0002
TOTAL FOR: VALIDATED DROPS \$1091.00	
TRANS #00385 OPER 09 SITE #004026	
TIME 07:13 07/31/01	

In the case of removing a macro cash, each box cash will be listed first, followed by a macro total.

BUY CHANGE RECEIPT

Name of receipt. _____

Financial Section: _____

The total amount validated is shown along with the amount vended. The drop amount is the net drop.

The transaction number is the log entry number. _____

The site is the store number. Date and time stamps are also shown.

BUY CHANGE RECEIPT

AMOUNT VALIDATED: \$20.00

AMOUNT VENDED: \$2.00

DROP AMOUNT: \$18.00

TRANS #01967 OPER 19 SITE #004026

TIME 02:30:18 05/24/01

VEND RECEIPT

Name of receipt and person vending change. _____

Vend Section: _____

The tube location and amount vended is listed.

The transaction number is the log entry number. _____

The site is the store number. Date and time stamps are also shown.

VEND RECEIPT

JOHN DOE

MAIN VEND:

COLUMN 1 AMOUNT \$0.50

TRANS #00088 OPER 12 SITE #004026

TIME 14:34:16 DATE 08/22/01

LOAD RECEIPT

Name of receipt and person loading tubes. _____

Vend Section: _____

Each column of each vend assembly is listed, including the number of tubes and resulting Dollar value loaded (added). Total load amount is also provided.

The transaction number is the log entry number. The site is the store number. Date and time stamps are also shown.

LOAD RECEIPT
JOHN DOE

MAIN VEND:

COLUMN 1	03	TUBES	\$1.50
COLUMN 2	06	TUBES	\$12.00
COLUMN 3	02	TUBES	\$10.00
COLUMN 4	08	TUBES	\$80.00
COLUMN 5	04	TUBES	\$40.00
COLUMN 6	09	TUBES	\$180.00
COLUMN 7	05	TUBES	\$100.00
COLUMN 8	01	TUBES	\$40.00
TOTAL AMOUNT LOADED:			\$463.50

TRANS #01492 OPER 60 SITE #04026
TIME 14:29:59 06/06/01

UNLOAD RECEIPT

Name of receipt and person unloading tubes. _____

Vend Section: _____

Each column of each vend assembly is listed, including the number of tubes and resulting Dollar value unloaded (taken out of the system). Any tubes removed in excess of the number accounted for is an amount over. If less tubes are counted leaving than are accounted for, the difference is reported as a shortage. Total load amount unloaded is also provided.

The transaction number is the log entry number. The site is the store number. Date and time stamps are also shown.

UNLOAD RECEIPT
JOHN DOE

MAIN VEND:

COLUMN 1	03	TUBES	\$00001.50
COLUMN 2	06	TUBES	\$00012.00
COLUMN 3	03	TUBES	\$00015.00
COLUMN 4	08	TUBES	\$00080.00
COLUMN 5	04	TUBES	\$00040.00
COLUMN 6	09	TUBES	\$00180.00
COLUMN 7	05	TUBES	\$00100.00
COLUMN 8	01	TUBES	\$00040.00

TOTAL UNLOAD: \$00468.50

TRANS #02290 OPER 21 SITE #004026
TIME 10:47:11 08/19/01

NOTES